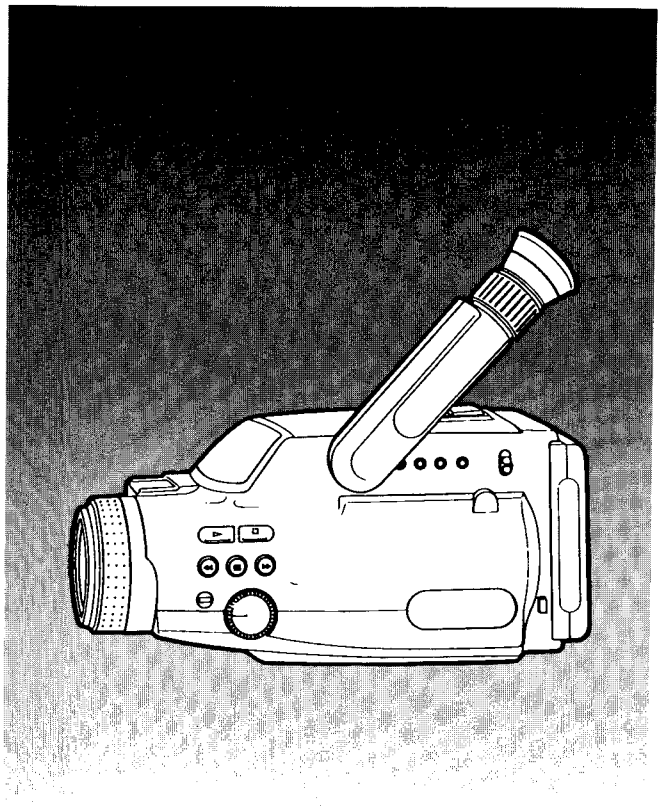
SAMSUNG

8mm CAMCORDER
VP-U12

8

SERVICE Manual

8mm CAMCORDER



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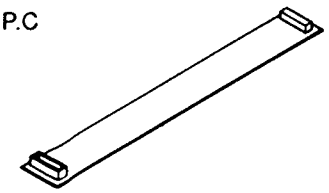
SERVICING JIGS

Part NO.	JIG ITEM	SPECIFICATION	DESCRIPTION			REMARKS
			Main Board	Process Board	CCD Board	
68140 - 500 - 007	Extension Cable 1	Pin 30	CN503 ◄——►	CNP03		Troubleshooting
68140 - 500 - 008	Extension Cable 2	Pin 30 (2EA)		CNP01 ◄——► CNP02 ◄——►	CND03 CND04	Troubleshooting
68140 - 200 - 113	Guide Roller Adjusting Driver	-	; Use for height adjustment of Guide Roller for envelope linearity adjustment.			For transport adjustment
68140 - 500 - 010	TP Board	-	; Use for adjustment of VCR Section. (Connect TP board to connector TP102 of Main board)			For VCR section adjustment
68140 - 200 - 122	Video Signal Input Cable	-	; Use for color bar signal input cable of connector V-IN of TP board.			For VCR section adjustment

68140 - 500 - 007

Extension Cable 1

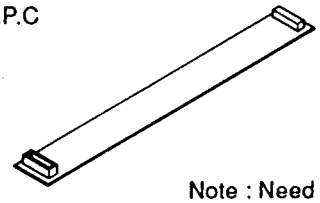
F.P.C



68140 - 500 - 008

Extension Cable 2

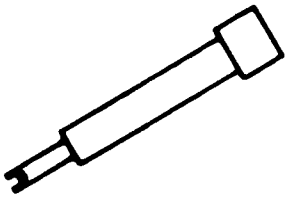
F.P.C



Note : Need two (2)

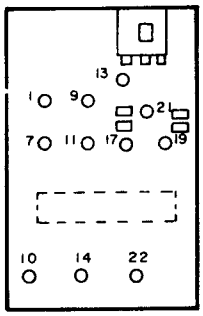
68140 - 200 - 113

Adjusting Driver



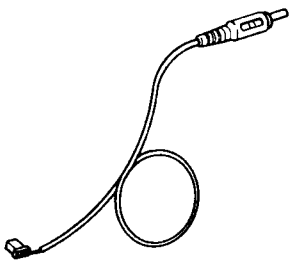
68140 - 500 - 010

TP Board

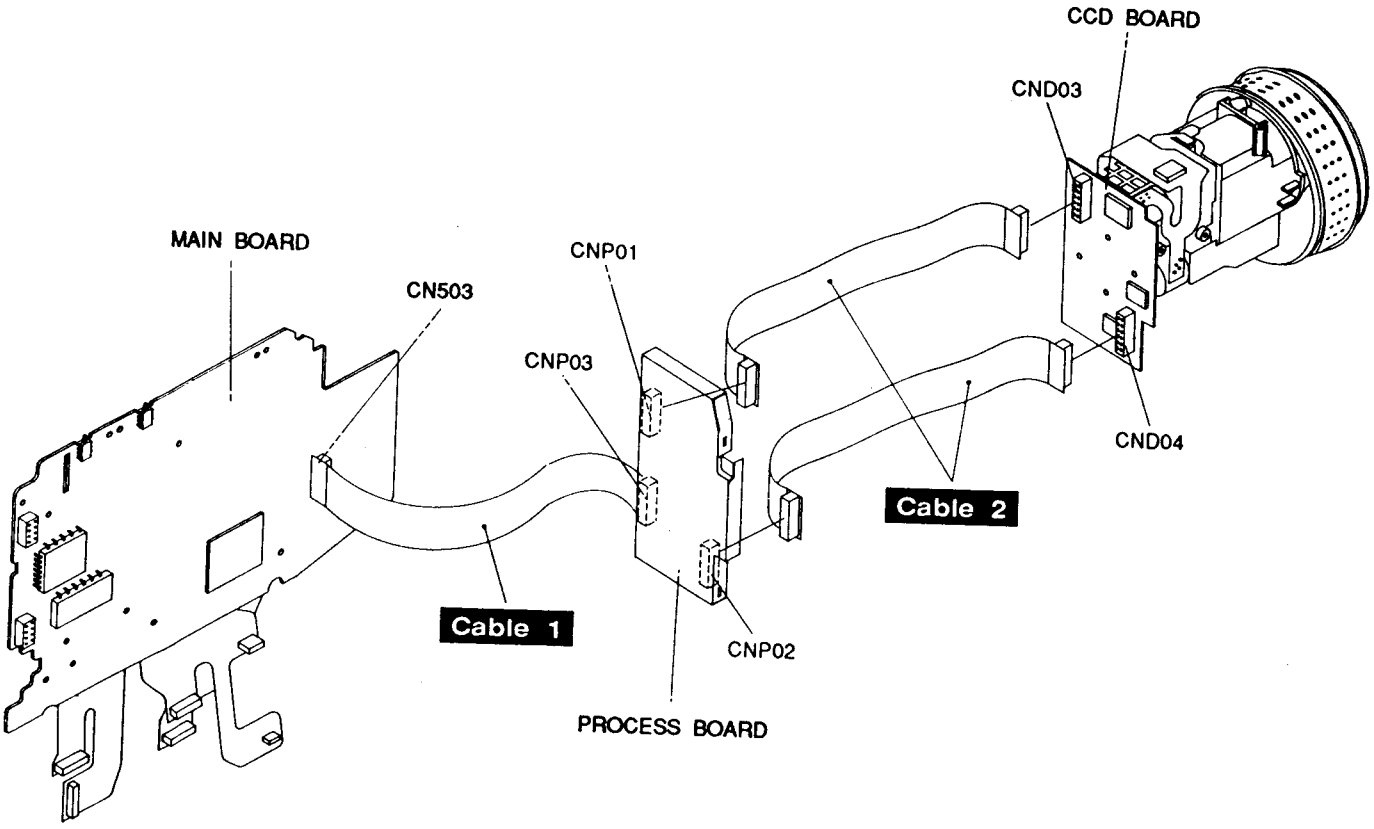


68140 - 200 - 122

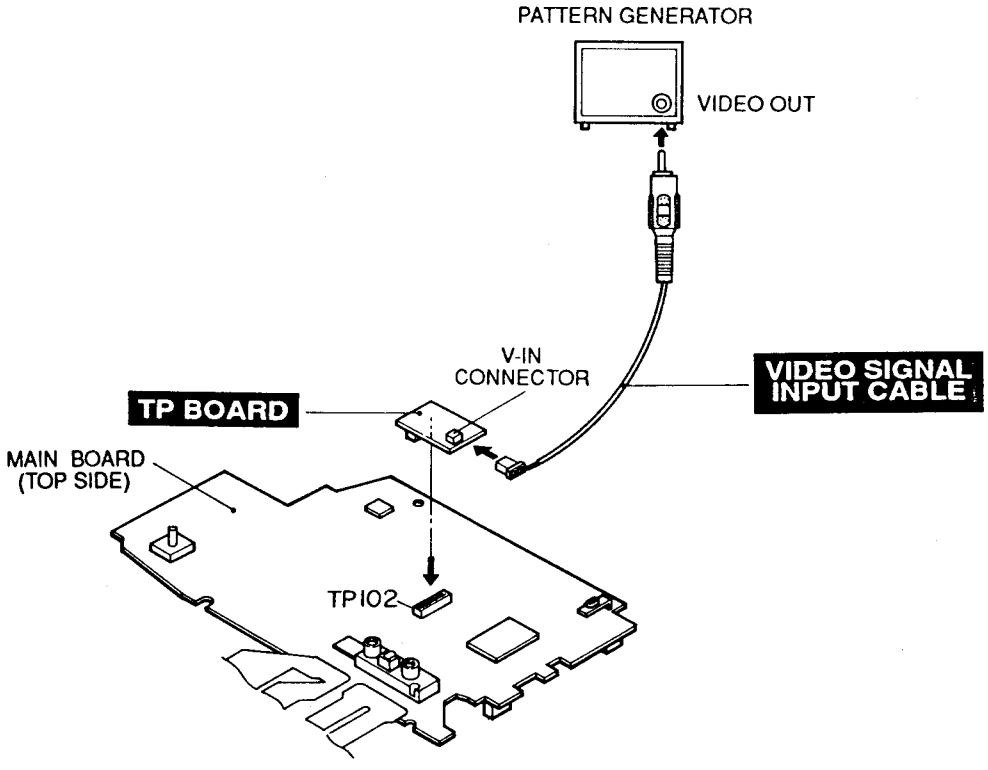
Video Signal Input Cable



Extension Cable Connections



TP Board & Video Signal Input Cable Connections



1. PRECAUTIONS

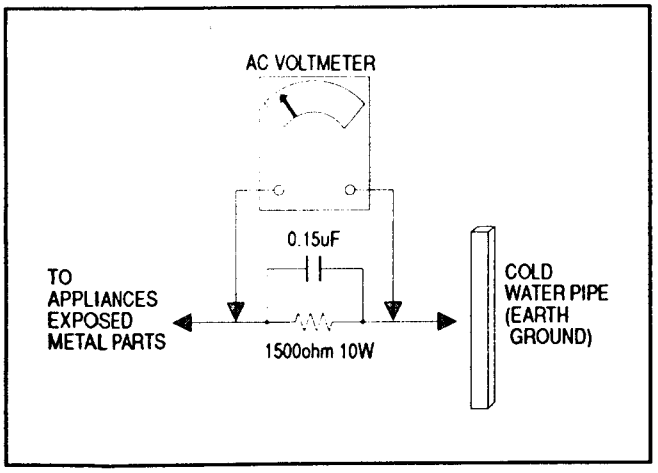
1-1. SAFETY PRECAUTIONS

GENERAL GUIDE LINE

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation paper shields are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.
4. Use a separated isolation transformer for this unit when servicing.

LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screw heads, connectors, control shafts, etc.
   When the exposed metallic part has a return path to the chassis, the reading should be between 1m and 5.2m.
   When the exposed metal does not have a return path to the chassis, the reading must be oo.



LEAKAGE CURRENT HOT CHECK (See Fig.)

1. Plug the AC cord directly into the AC outlet.
   Do not use an isolation transformer for this check.
2. Connect an 1.5K, 10 watt resistor, in parallel with a 0.15uF capacitor, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in figure.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester may be used to make the hot checks, leakage current must not exceed 0.5 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

1-2. ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called "Electrostatically Sensitive (ES) Devices". Examples of typical ES devices are integrated circuits, some field effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti static" can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals.
   These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

CAUTION : Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise, harmless motion such as the brushing together of your clothes fabric to the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

1-3. SAFETY INSTRUCTIONS

1. **Read Instructions** : All the safety and operating instructions should be read before the CAMCORDER is operated.

2. **Retain Instructions** : The safety and operating instructions should be retained for future reference.

3. **Heed Warnings** : All warnings on the CAMCORDER and the operating instructions should be adhered to.

4. **Follow Instructions** : All operating and maintenance instructions should be followed.

5. **Cleaning** : Unplug this CAMCORDER from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a dry cloth for dusting cabinet.

6. **Attachments** : Do not use attachments not recommended by the CAMCORDER product manufacturer, as they may be hazardous or cause damage.

7. **Water and Moisture** : Do not use this CAMCORDER near water, i.e, bath tub, wash bowl, kitchen sink, laundry tub, in a wet basement, near a swimming pool, or the lake.

8. **Accessories** : Do not place this CAMCORDER on an unstable cart, stand, tripod, bracket, or table. The CAMCORDER, if dropped could cause damage or injury. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the CAMCORDER. Any mounting of the unit should follow the manufacturer's instructions and should use a mounting accessory recommended by the manufacturer.

a. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surface may cause the appliance and cart combination to overturn.

PORTABLE CART WARNING
(Symbol provided by RETAC)

9. **Ventilation** : Slot and opening in the cabinet are provided for ventilation to ensure reliable operation of the CAMCORDER and to protect it from overheating. These openings must not be blocked or covered. Never place your CAMCORDER on a bed, sofa, rug, or other similar surface on or near a radiator or heat register. This CAMCORDER should not be placed in a built-in installation such as a book case or rack unless proper ventilation is provided or manufacturer's instructions have been adhered to.

10. **Power Sources** : This CAMCORDER should be operated only from the type of power source indicated on the label. If you are not sure of the type of power supply to your home, consult your appliance dealer or local power company. To operate the CAMCORDER by battery or other power source, consult the operating instructions.

11. **Grounding and Polarization** : This CAMCORDER may be equipped with either a polarized 2-wire AC line plug (a plug having one blade wider than the other) or a 3-wire grounding type plug, a plug having a third (grounding) pin. The 2-wire polarized plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet,try reversing the plug. If the plug still fails to fit, contact your electrician to replace your outlet. Do not defeat the safety purpose of the polarized plug.

12. **Power-Cord Protection** : Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, especially cords of plugs and convenience receptacles, at the point where they exit from the unit.

13. **Lightning** : For added protection of this CAMCORDER during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage of the CAMCORDER from lightning and power-line surges.

14. **Power Lines** : An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits where it can fall into such power lines or circuit. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.

15. **Overloading** : Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.

16. **Objects and Liquids** : Never push objects of any kind into the CAMCORDER as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquids of any kind onto the CAMCORDER. Should spill occur, unplug unit and have it checked by a technician before use.

17. **Servicing** : Do not attempt to service this CAMCORDER yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service person.

18. **Damage Requiring Service** : Unplug this CAMCORDER from the wall outlet and refer servicing to qualified service personnel under the following conditions :

a. When the power-supply cord or plug is damaged.
b. If any liquid has been spilled into, or objects have fallen in the CAMCORDER
c. If the CAMCORDER has been exposed to rain or water.
d. If the CAMCORDER does not operate normally by following the operating instruction, adjust only those controls that are covered by the operating instructions. Improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the CAMCORDER to its normal operation.

WARNING ;
Lithium battery - Danger of explosion if incorrectly replaced. Must only be replaced by a battery of same make and type. Used batteries shall be returned to the supplier.

e. If the CAMCORDER has been dropped or the cabinet has been damaged.
f. When the CAMCORDER exhibits a distinct change in performance, this indicates a need for service.

19. **Replacement Parts** : When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

20. **Safety Check** : Upon completion of any service or repairs to this CAMCORDER, the safety check procedure should be performed.

IMPORTANT SAFETY NOTICE
There are special components in this equipment which are important for safety. These parts are marked by ⚠ in the schematic diagram, exploded views and replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts owing to shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

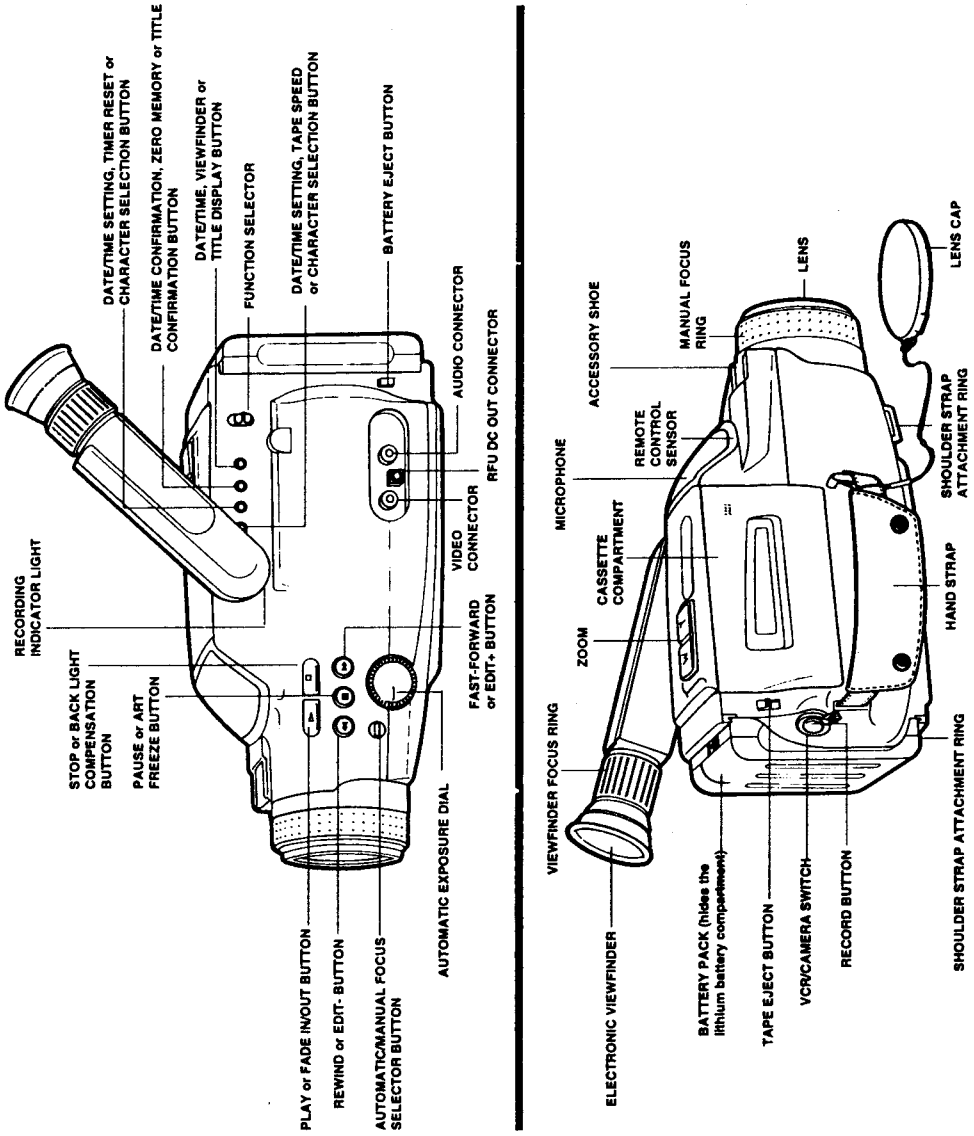
2. SPECIFICATIONS

Specifications are correct at the time of printing. Product specifications are subject to change without notice.
See below for product specifications.

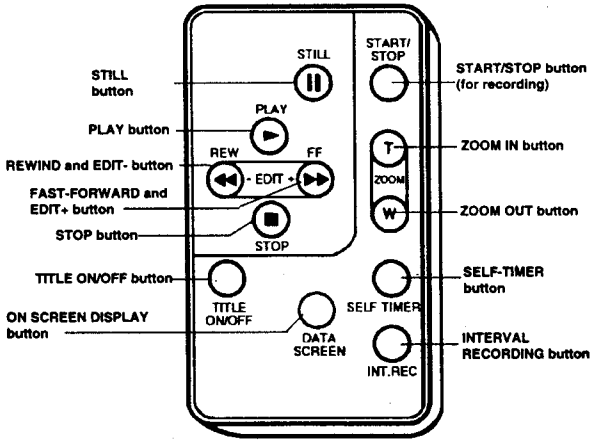
Specifications			
Operation	Description	Operation	Description
Video Recording System	Rotary two heads, Helical FM scanning system	Power Requirement	AC power adaptor (7.5V) Battery pack (6.0V)
Audio Recording System	FM system	Power Consumption	6.3Watt (In camera mode)
Video Signal	PAL colour, CCIR standard	Tripod attachment thread	Attachment screw less than 9mm long
Cassette Format	8mm video format cassette	Microphone	Electric condensor microphone omni-directional monaural type see page3
Tape Speed	SP : Approx. 20.051 mm/sec. LP : Approx. 10.058 mm/sec.	Temperature range	Operating : 0° C to 40° C (32° F to 104° F) storage : -20° C to 60° C (-4° F to 140° F)
Recording/Playback Time	SP mode: 1 hour 30 minutes (P5-90) LP mode: 3 hours (P5-90)	Dimension (W/H/D)	Approx. 100 X 105 X 246 mm (3.9 X 4.1 X 9.6 inchs),Approx. 780g (<2lb) including lens cap, excluding battery pack and cassette
Fast forward/Rewind Time	Approx. 5 min 40 secs. (P5-60)	Video Output	Phono jack, 1Vp-p, 75 ohms unbalanced, sync negative
Image Device	CCD (Charge Coupled Device)	Audio Output	Phono jack, 7.5 dBs for an output impedance of less than 2.2 kilo-ohms
Viewfinder	Black and White Electronic viewfinder	RFU DC OUT	Special minijack, 5V DC
Lens	Combined 12X power zoom lens f = 5.4 ~ 64.8mm, F1.8 with auto wide macro, Filter diameter 37mm		
Auto Focus System	Inner		
Color Temperature	AUTO/INDOOR 3,100° K, OUTDOOR 5,100° K		
Lighting	>300LUX (28 Footcandles), Minimum Lighting 2 LUX		
Aperture Correction	Automatic with Back light adjustment		

Weight and dimensions shown are approximate.

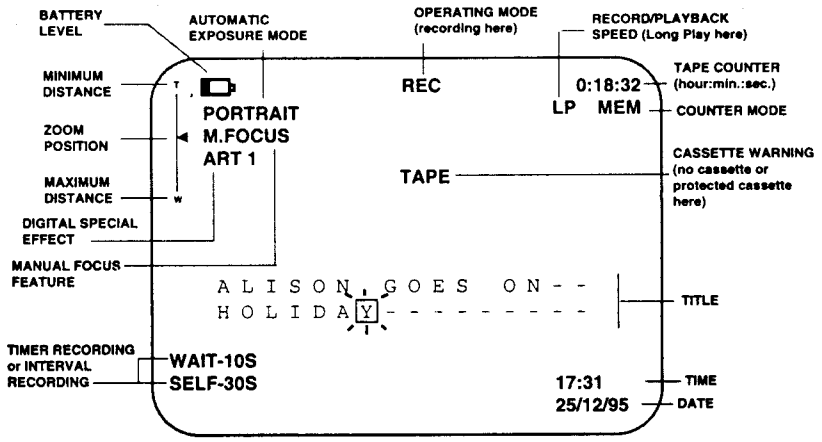
3. OPERATING INSTRUCTION



Display, Remote Control and Accessories



REMOTE CONTROL



MAIN VIEWFINDER INDICATORS

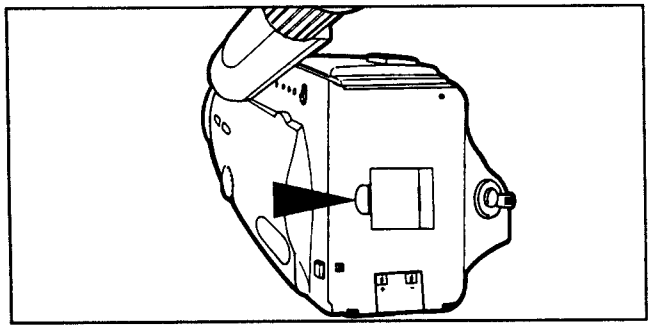
Inserting the Lithium Batteries

The two lithium batteries supplied (like watch batteries, reference CR-2025) last about one year. One must be inserted in the camcorder, to store the date, time and title that can be recorded on a cassette, the other in the remote control.

You must replace the appropriate battery if:

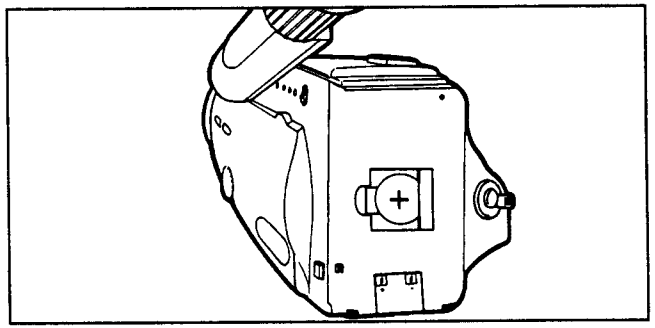
- *The date flashes in the viewfinder for about five seconds when you set the VCR/CAMERA switch to CAMERA (camcorder lithium battery)*
- *The remote control does not work correctly (remote control lithium battery)*

NOTE *After replacing the camcorder lithium battery, reset the date, time and title (see pages12).*



Open the battery holder on the rear of the camcorder (under the battery pack), by pushing the tab in the direction shown.

Note:
- LITHIUM BATTERY. - DANGER OF EXPLOSION IF INCORRECTLY REPLACED.
- MUST ONLY BE REPLACED BY A BATTERY OF SAME MAKE AND TYPE.
- USED BATTERIES SHALL BE RETURNED SUPPLIER.



Insert the battery, taking care to respect the polarities: the "+" on the battery must be facing upwards.

Close the battery holder.

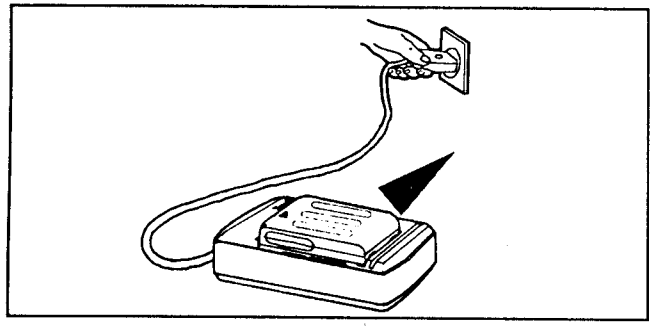
Charging the Battery Pack

The battery pack supplied lasts approximately 40 minutes, depending on how much you use the Zoom and Pause functions. It is, therefore, recommended that you have several available.

You must charge the battery pack when:

- *You purchase the camcorder*
- *The battery pack is completely discharged (the ▭ symbol flashes in the viewfinder)*

IMPORTANT *Please read the instructions on how to use and take care of the battery pack on page 63.*

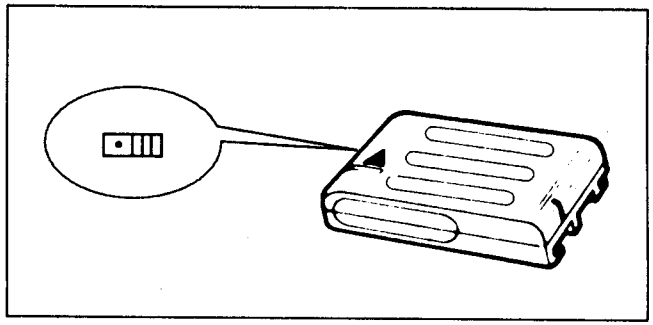


Connect the AC power adaptor to a wall socket.

Attach the battery pack to the adaptor by:

- Pressing down on the battery pack
- Sliding it to the right

Result: The power and charge indicator lights come on.



Leave the battery to charge for about one hour.

Result: After one hour, the charge indicator light goes out.

Set the identification tab to the red position to show that the battery is ready for use.

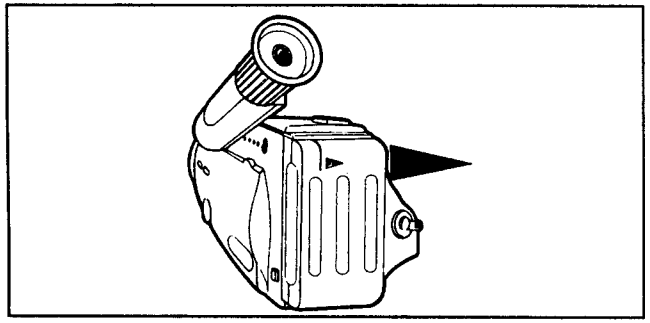
Attaching the Battery Pack

Once the battery pack has been completely charged, you can attach it to the camcorder.

When you have finished using your camcorder, remove the battery pack so that it will not be damaged in any way.

IMPORTANT ***Before attaching or removing the battery pack, check that the VCR/CAMERA switch is set to OFF.***

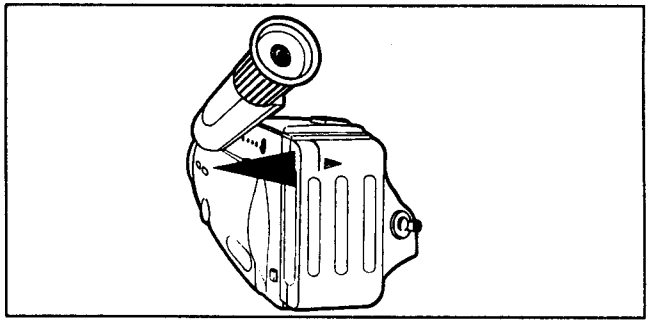
Attachment



Press down on the battery pack and slide it to the right.

Make sure that the battery pack is fitted firmly into place. Otherwise, you may damage the pins on the camcorder.

Removal



Hold down the BATTERY EJECT button.

Slide the battery pack to the left to release it.

Set the identification tab to the black position to show that the battery is discharged.

4. DISASSEMBLY

4-1. INSTRUMENT DISASSEMBLY

4-1-1. Cover-Housing Ass'y Removal

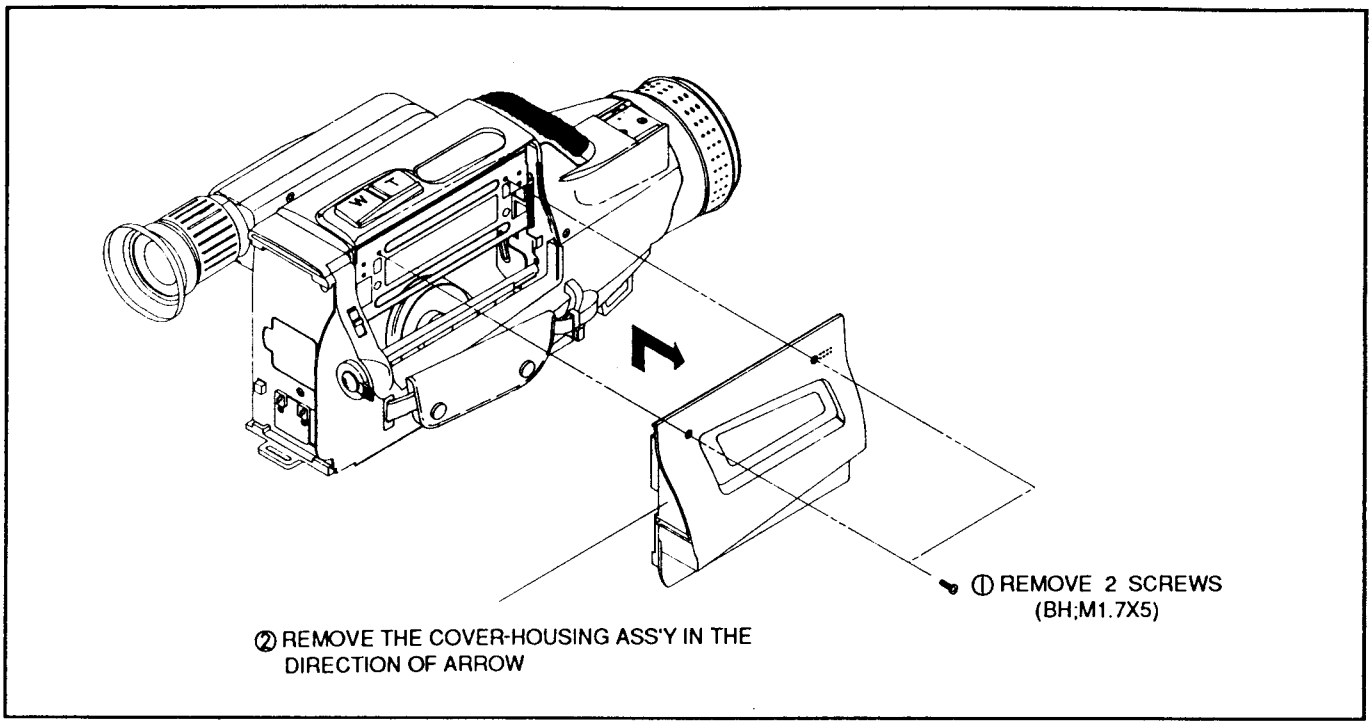


Fig. 1 Cover-Housing Ass'y Removal

4-1-2. Case-Top Ass'y Removal

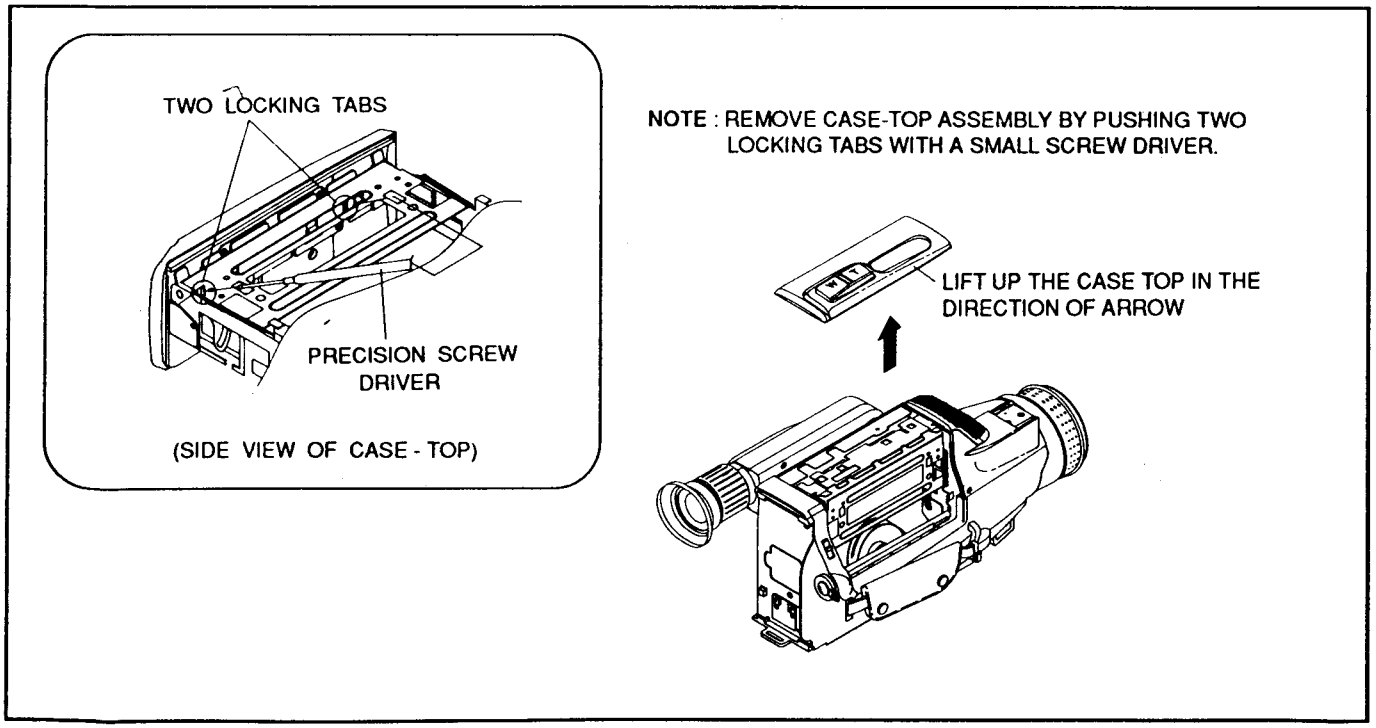


Fig. 2 Case-Top Ass'y Removal

4-1-3. Case-Front Ass'y Removal

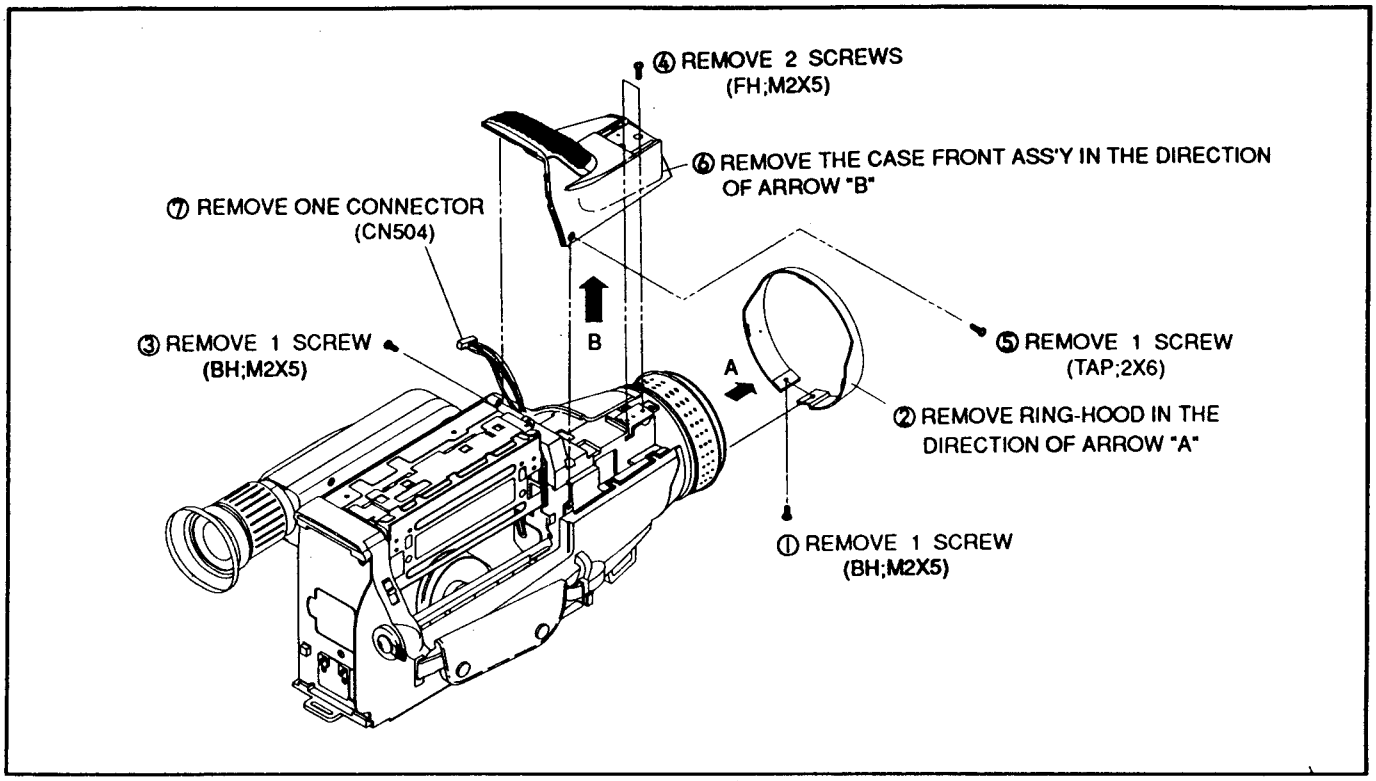


Fig. 3 Case-Front Ass'y Removal

4-1-4. Case-Right Ass'y Removal

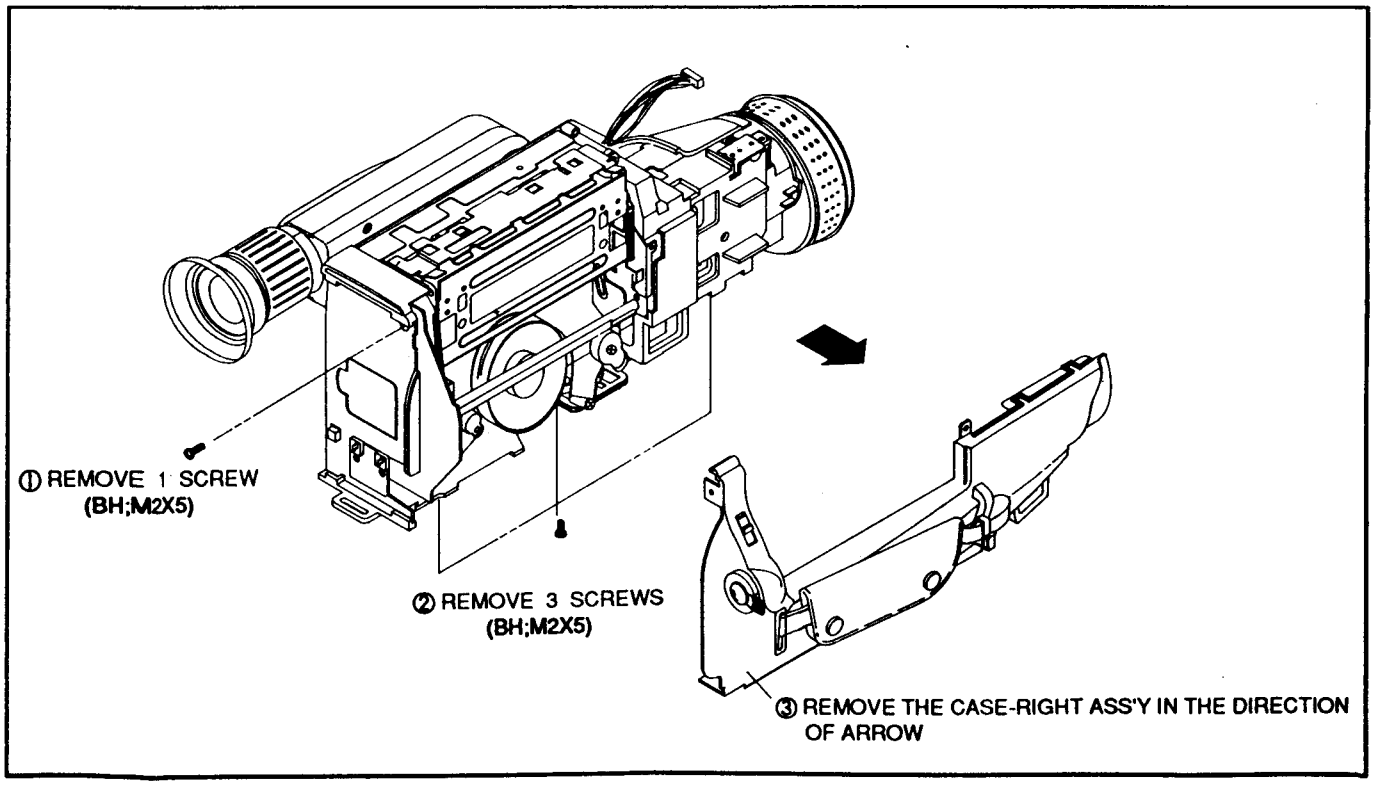


Fig. 4 Case-Right Ass'y Removal

4-1-5. Case-Left Ass'y Removal

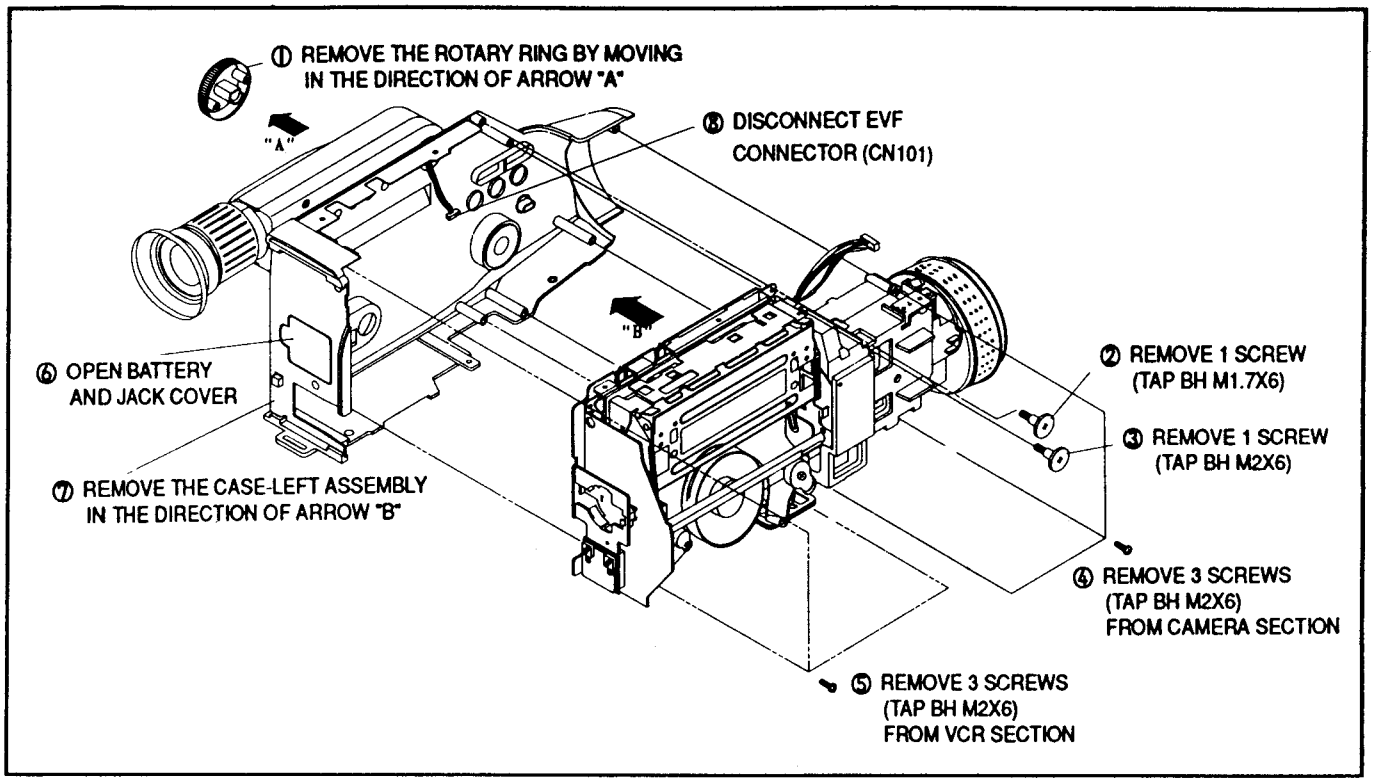


Fig. 5 Case-Left Ass'y Removal

4-1-6. VCR & CAMERA Block Removal

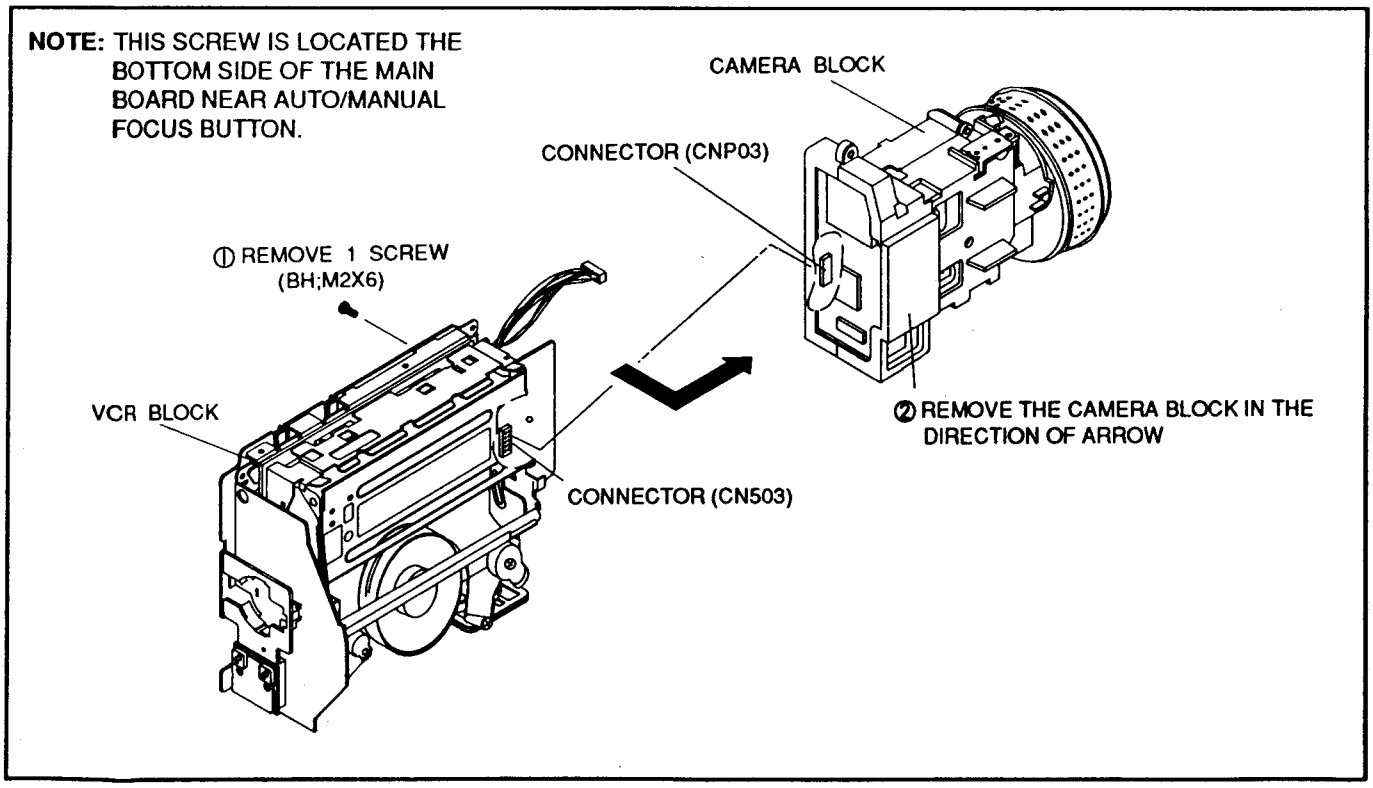


Fig. 6 VCR & CAMERA Block Removal

4-1-7. VCR Block Removal

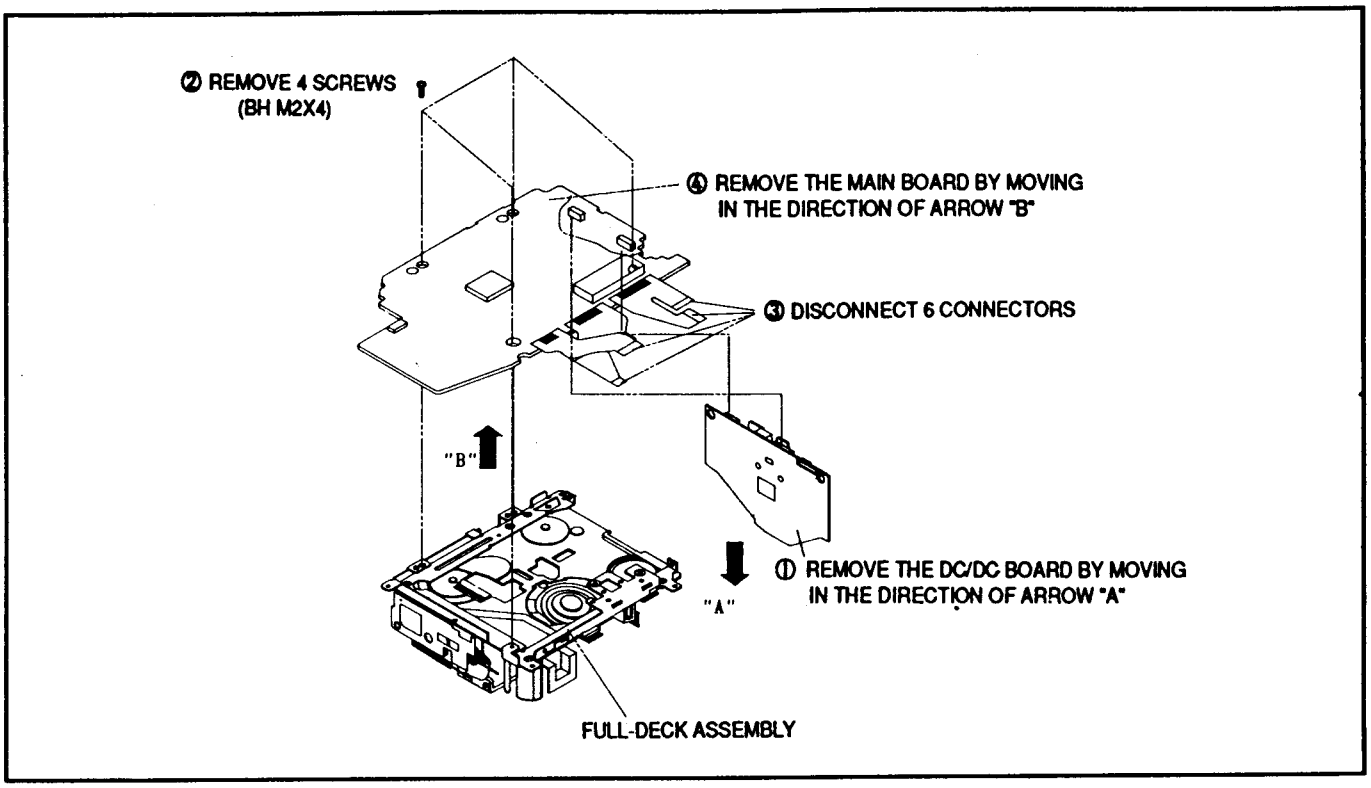


Fig. 7 VCR Block Removal

4-1-8. CAMERA Block Removal

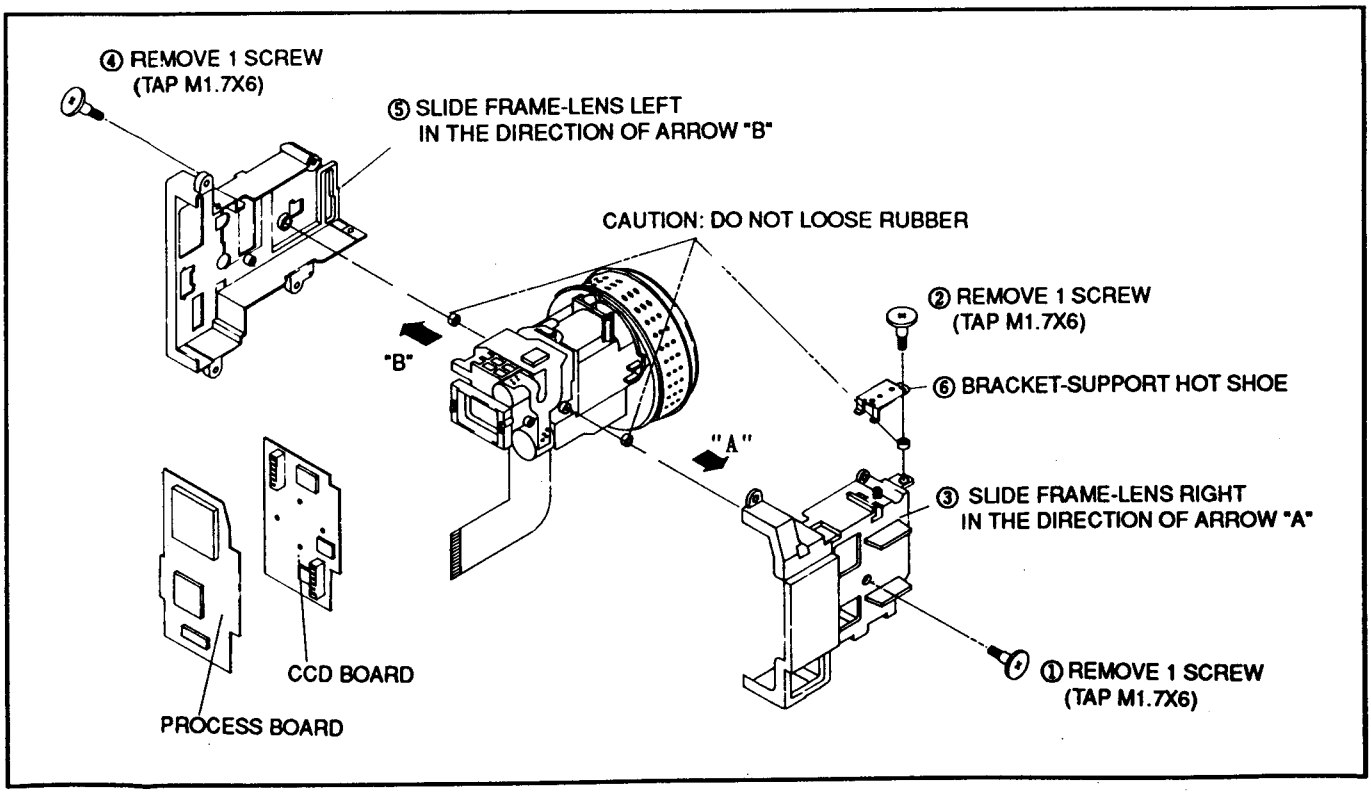


Fig. 8 CAMERA Block Removal

4-1-9. CAMERA Board Removal

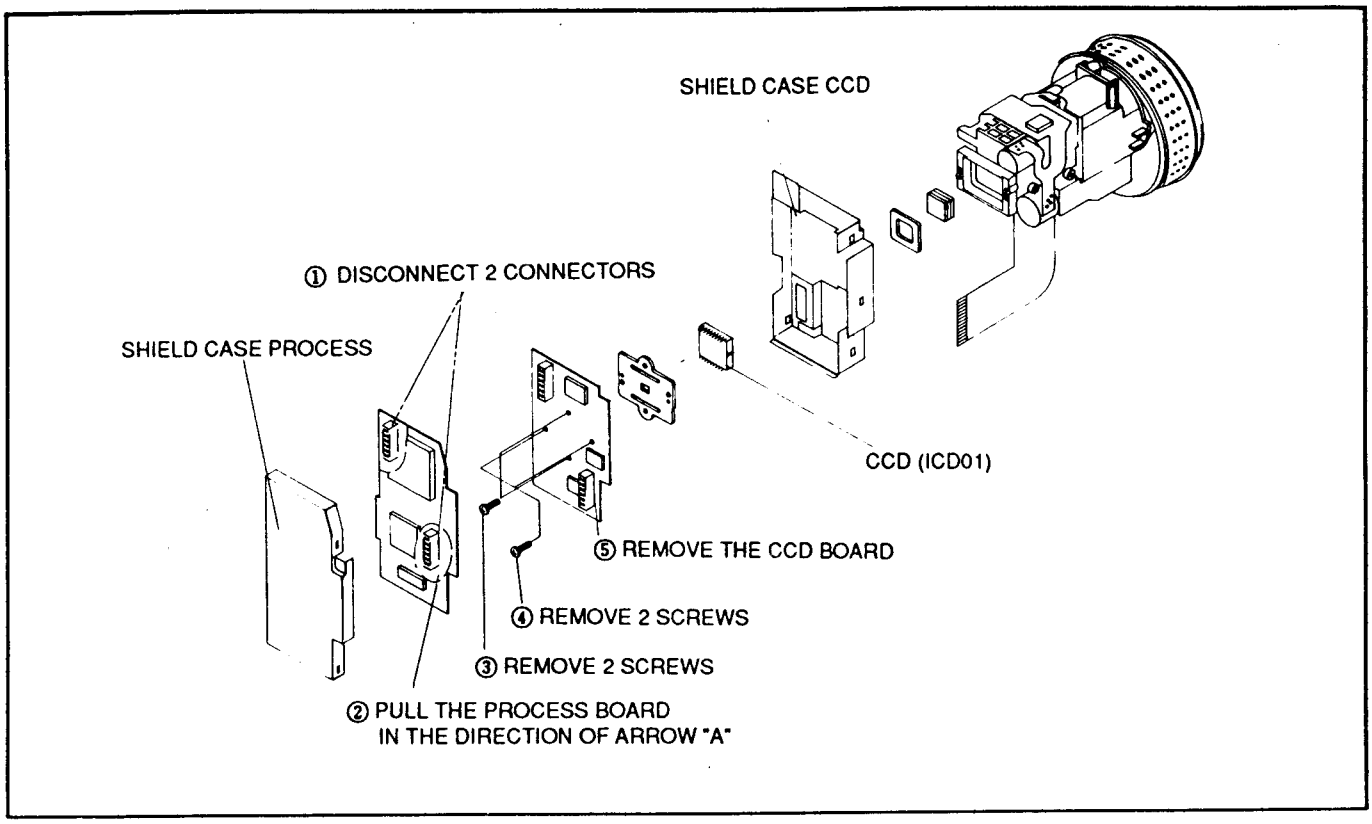


Fig. 9 Camera Board Removal

4-1-10. EVF Ass'y Removal

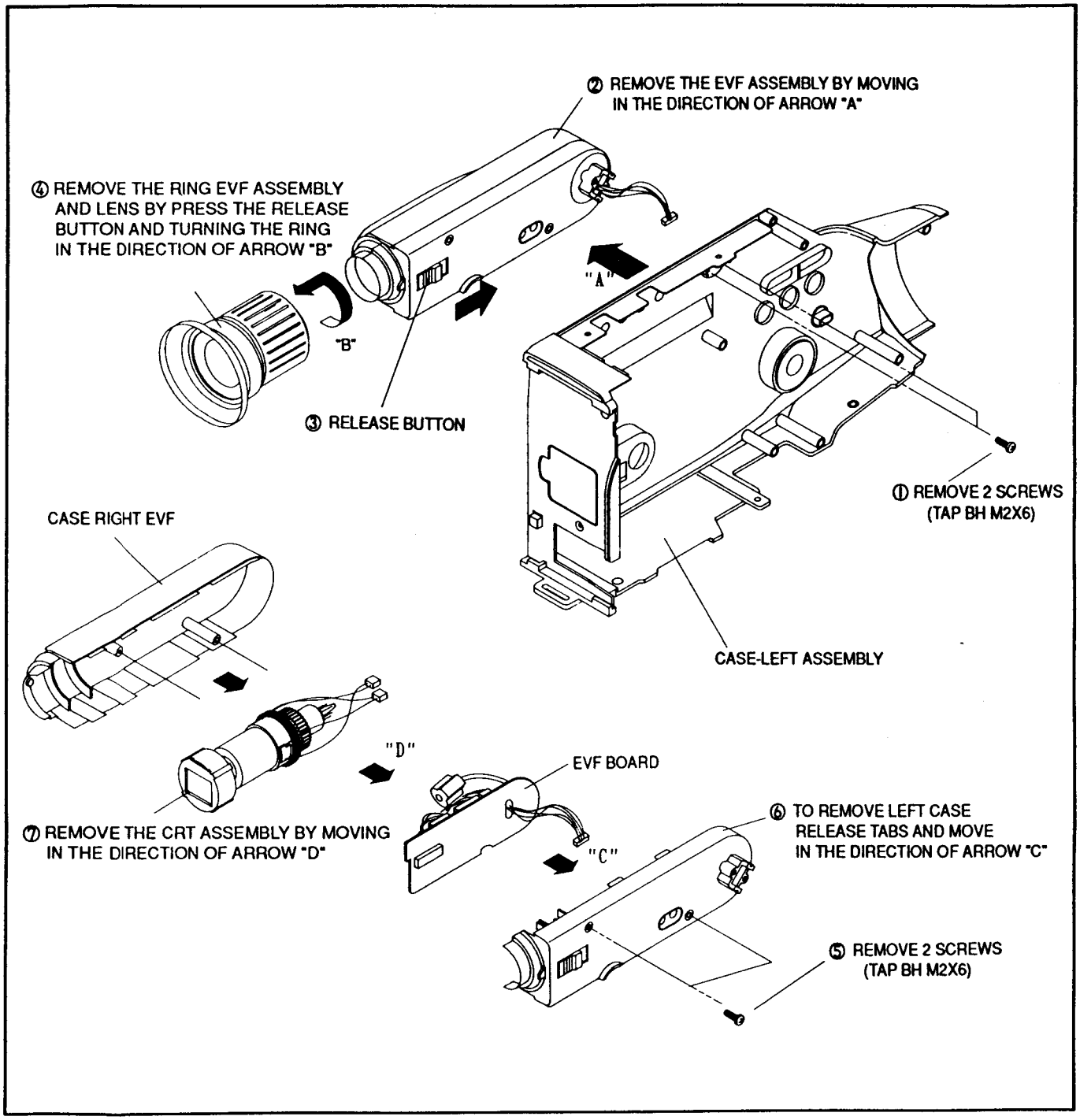


Fig. 10 EVF Ass'y Removal

4-1-11. Circuit Boards Location

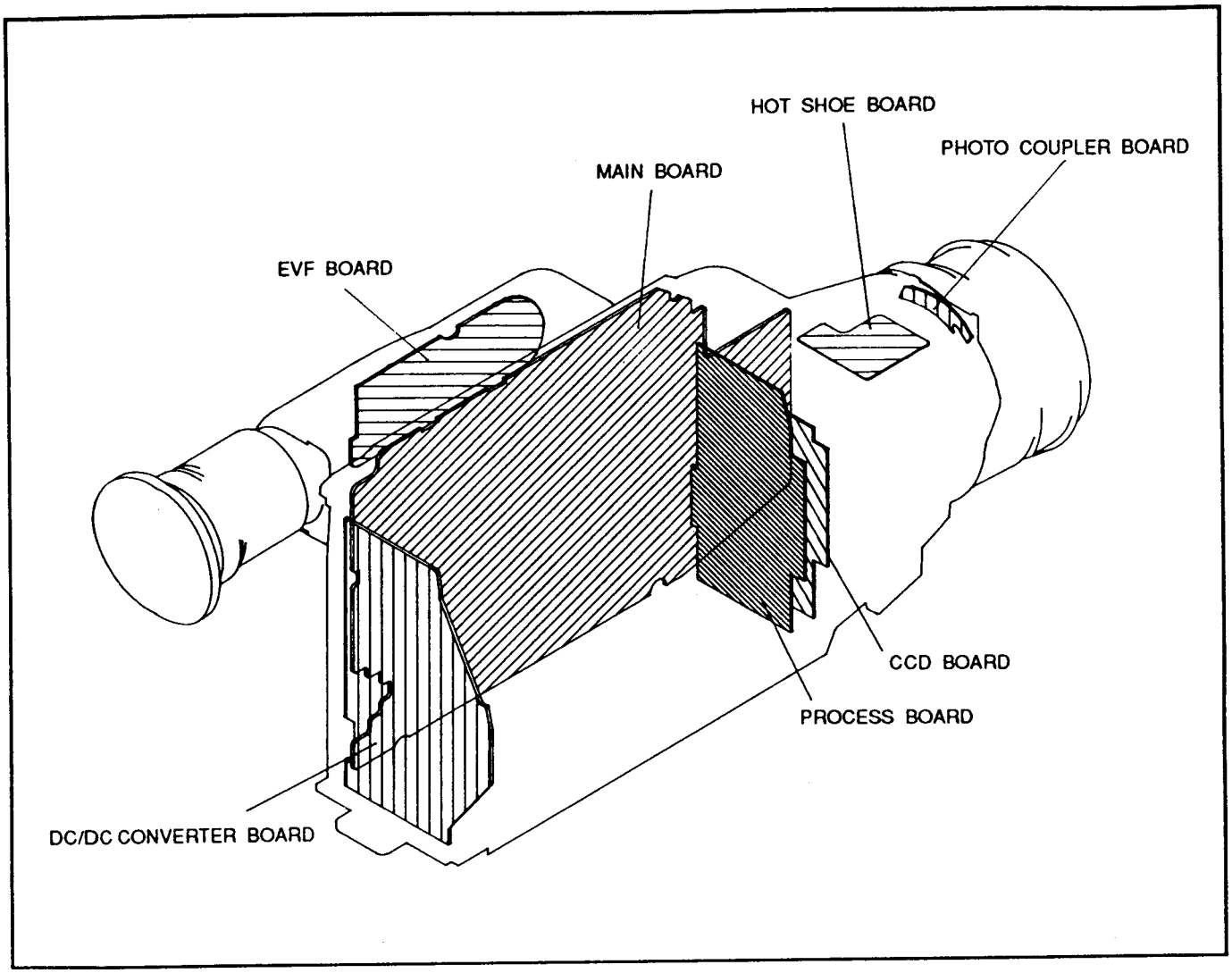
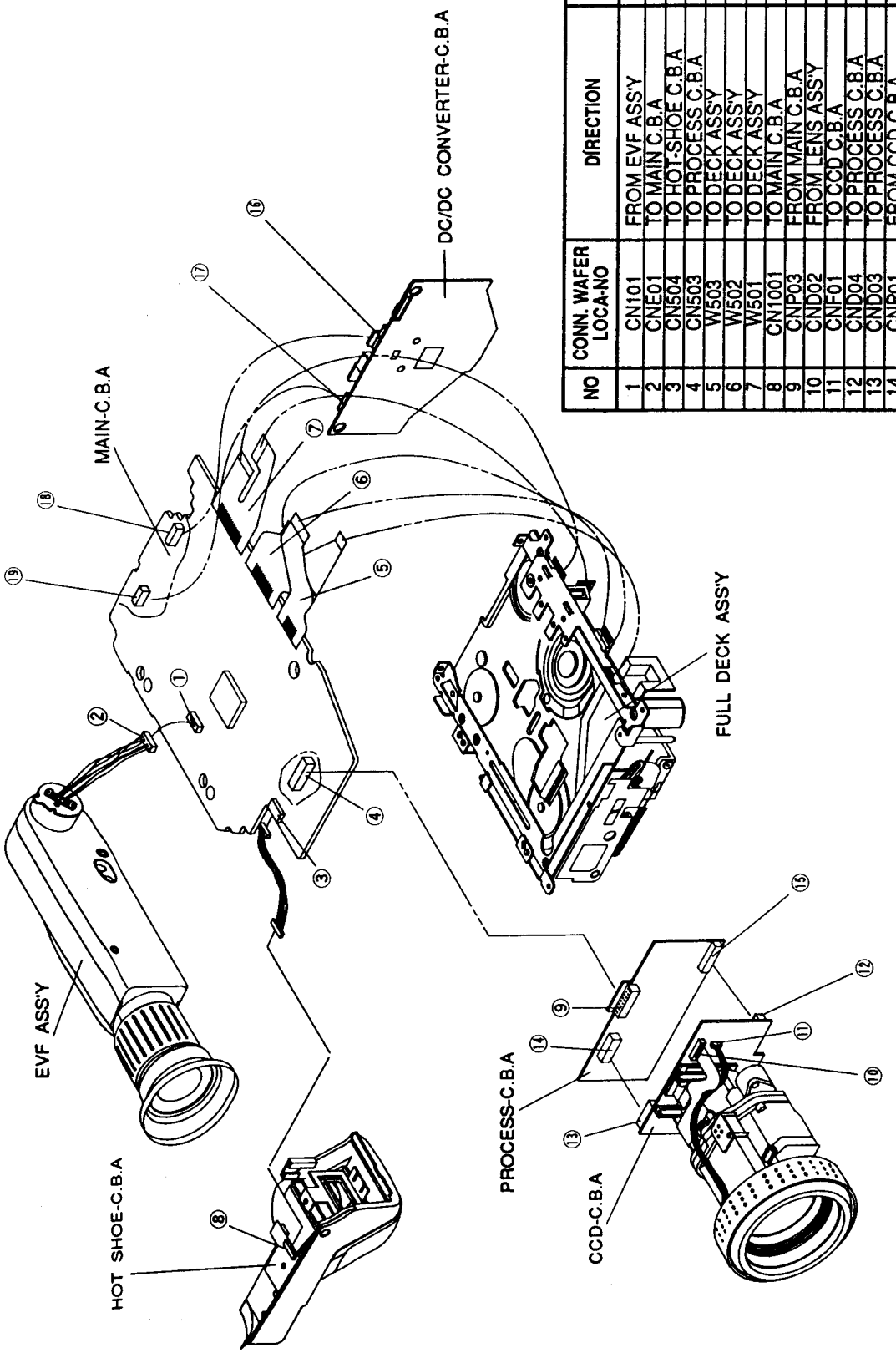


Fig. 10 Circuit Boards Location

4-1-12. Diagram of Connectors Connection



NO	CONN. WAFER LOCA-NO	DIRECTION	CONN. WAFER LOCA-NO
1	CN101	FROM EVF ASS'Y	CNE01
2	CNE01	TO MAIN C.B.A	CN101
3	CN504	TO HOT-SHOE C.B.A	CN1001
4	CN503	TO PROCESS C.B.A	CNP03
5	W503	TO DECK ASS'Y	
6	W502	TO DECK ASS'Y	
7	W501	TO DECK ASS'Y	
8	CN1001	TO MAIN C.B.A	CN504
9	CNP03	FROM MAIN C.B.A	CN503
10	CND02	FROM LENS ASS'Y	
11	CNF01	TO CCD C.B.A	CND01
12	CND04	TO PROCESS C.B.A	CNP02
13	CND03	TO PROCESS C.B.A	CNP01
14	CNP01	FROM CCD C.B.A	CND03
15	CNP02	FROM CCD C.B.A	CND04
16	CN901	TO MAIN C.B.A	CN501
17	CN902	TO MAIN C.B.A	CN502
18	CN501	FROM DC/DC C.B.A	CN901
19	CN502	FROM DC/DC C.B.A	CN902

4-2. MECHANICAL DISASSEMBLY

4-2-1. Mechanical Parts Locations

1. Main Deck (Top View)

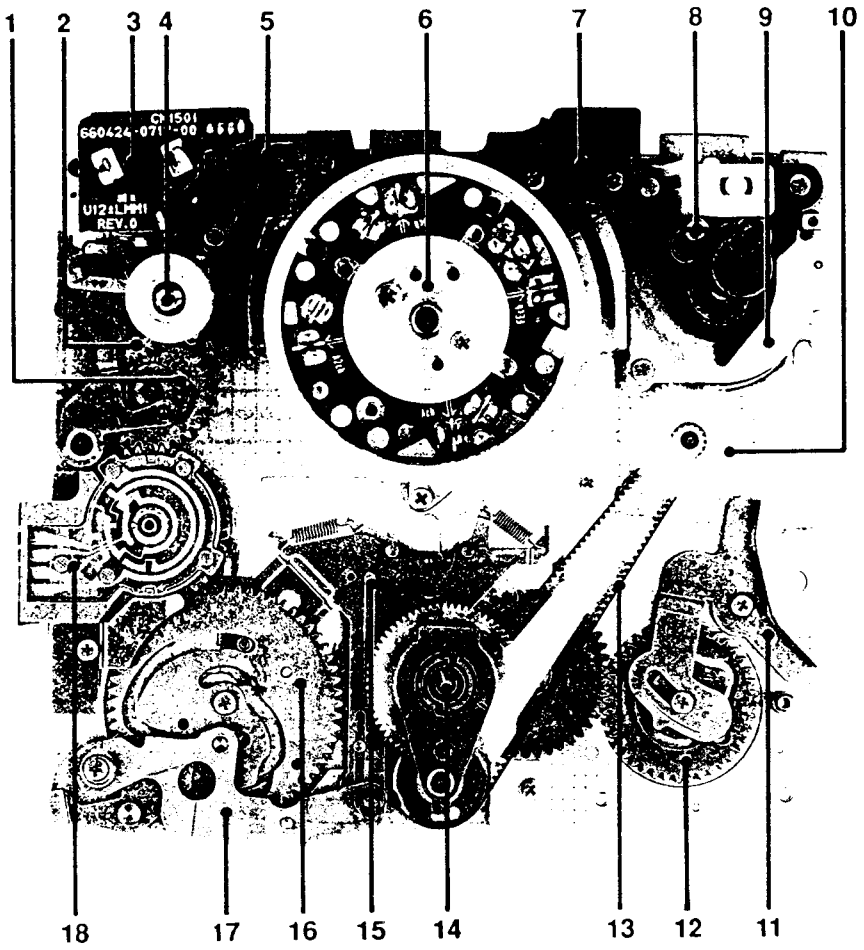


Fig. 12 Main Deck (Top View)

1. GEAR-CAM TENSION
2. GEAR-LOADING B
3. MOTOR-LOADING
4. POLE-BASE SUB ASS'Y
5. RAIL-STOPPER L
6. ASS'Y-SEMI DRUM
7. GUIDE-TAPE T
8. BASE-CAPSTAN ASS'Y
9. MOTOR CAPSTAN
10. GEAR-CAPSTAN ASS'Y
11. LEVER-CAM PINCH ASS'Y
12. GEAR-CAM PINCH
13. BELT-TIMING
14. IDLER ASS'Y
15. PLATE-SLIDER ASS'Y
16. GEAR-CAM MAIN
17. LEVER-CAM ASS'Y
18. SWITCH-MODE ASS'Y

2. Sub Deck (Top View)

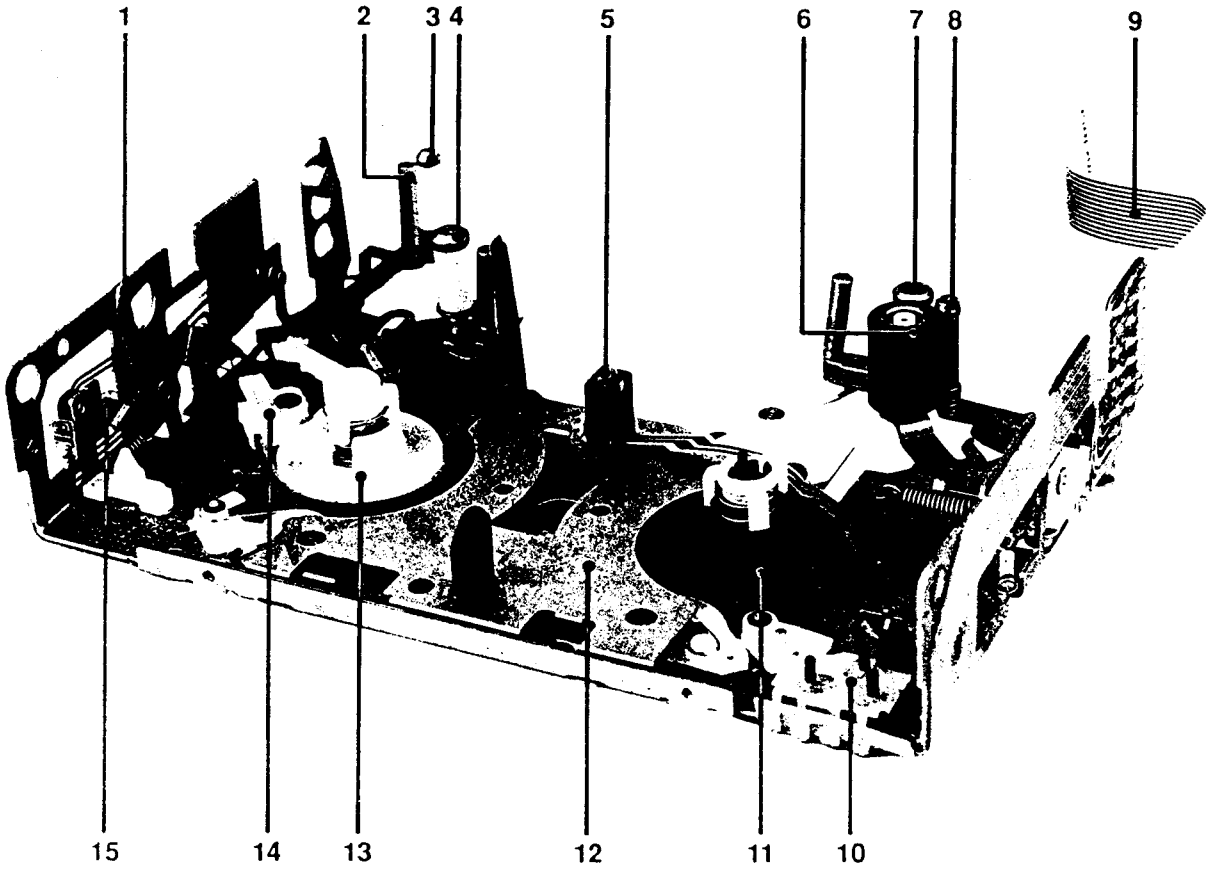


Fig. 13 Sub Deck (Top View)

1. SUB-CHASSIS
2. ARM-TENSION ASS'Y
3. LEVER-GUIDE ASS'Y
4. ARM-POLE BASE S ASS'Y
5. LED-IR
6. ARM-PINCH R ASS'Y
7. ARM-POLE BASE T ASS'Y
8. ARM-REVIEW ASS'Y
9. F.P.C CONNECTION
10. SW-DETECTOR
11. REEL-T ASS'Y
12. COVER-REEL ASS'Y
13. REEL-S ASS'Y
14. HOLDER-TENSION BAND ASS'Y
15. SW-LEAF

3. Housing Ass'y

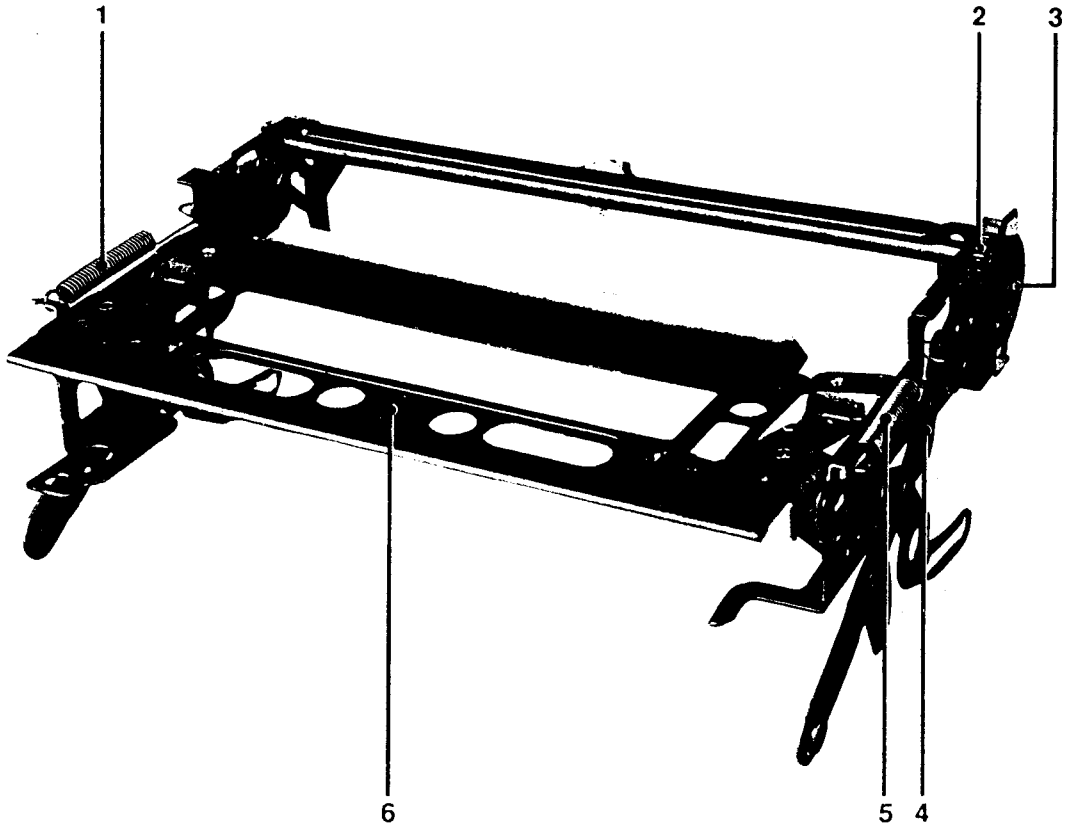


Fig. 14 Housing Ass'y

1. SPRING EJECT L
2. SHAFT-HOUSING ASS'Y
3. DAMPER-HOUSING
4. ARM-R ASS'Y
5. SPRING EJECT R
6. PLATE-HOUSING ASS'Y

4-2-2. Ready for Operation

1. Make sure Main Power S/W is turned off.
2. Connect lead connector and F.P.C to VCR Main Board.
3. Turn the Main Power S/W on.
4. Load a tape and make sure that Auto Loading is working.
5. Confirm the stop mode.
6. Check the Deck movement by pressing PLAY, FF and REW key.
7. Press the Eject (Stop) Key.

4-2-3. Deck Operation without Housing Ass'y & Tape (See Fig. 15)

1. Cover the LED assembly with ① ELECTRICAL TAPE.
2. Push the Lever Stopper ③ in the dirrection of arrow "A" in order to turn the S/W Leaf ② on. (Refer to Fig. A)
3. Turn on the test mode of the VCR Main board.
4. Follow the procedures for Ready for Operation.

Note : Push the Lever Locker ④ in the direction of arrow "A" in order to eject the tape compulsorily under the condition of Housing loaded.

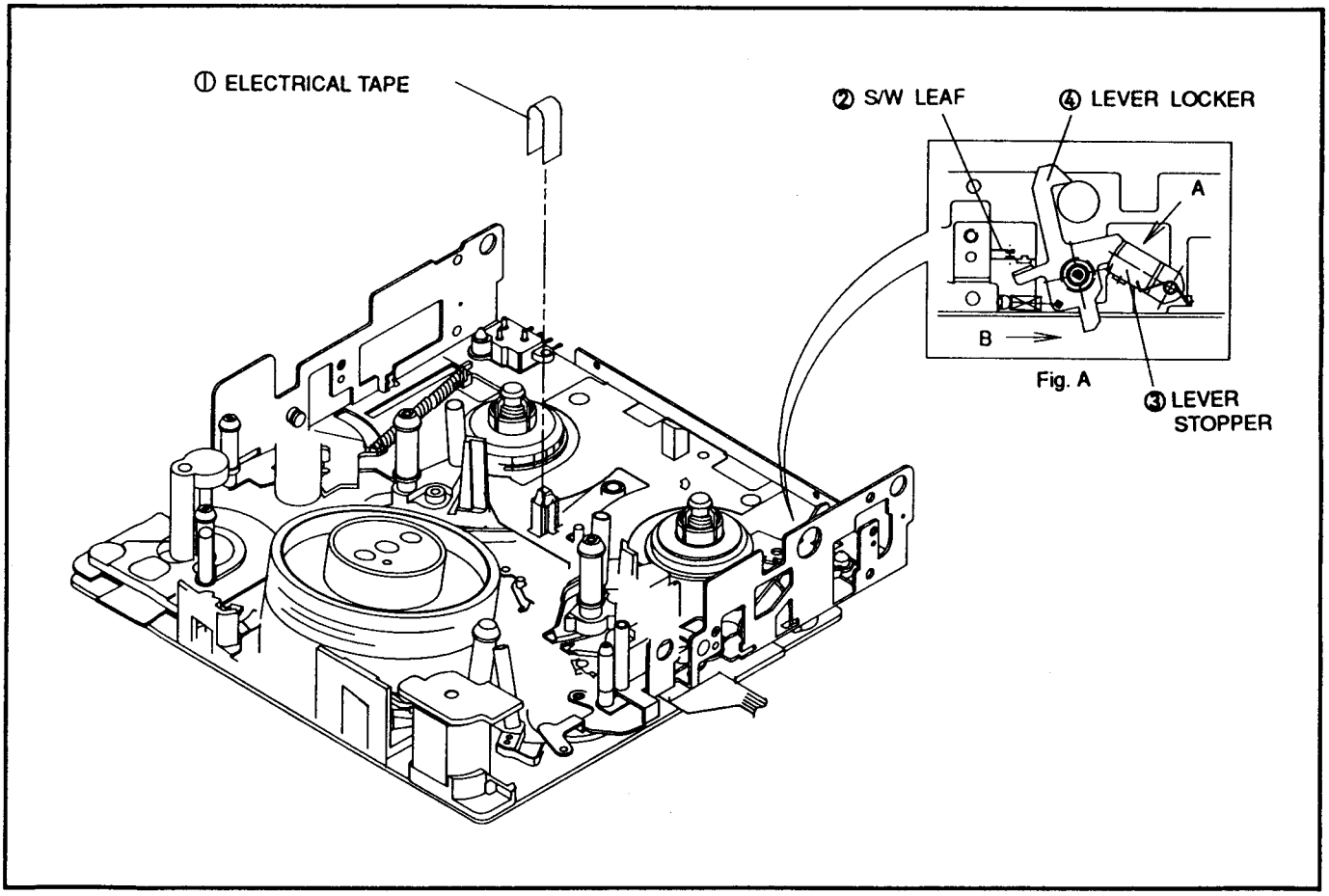


Fig. 15

4-2-4. Housing Ass'y

1. Removal

Note : Be sure to remove the Housing Ass'y when Housing is ejected.

1) Remove four (4) screws ① then remove the Cover Back ②.
2) Remove two (2) Pin Hinges ③ and then remove the Lever Slide ④ as described in Fig. A.

2. Reassembly

1) Mount the Lever Slide ④ to pin as described in Fig. A.
2) Mount the Pin Hinge ③ as described in Fig. b,to the groove by pushing the Housing ⑤ in the direction of arrow A.
3) Assemble the Cover Back ② then fasten four (4) screws ①.

Note : After assembling, make sure Housing Ass'y is performing properly by installing Housing.

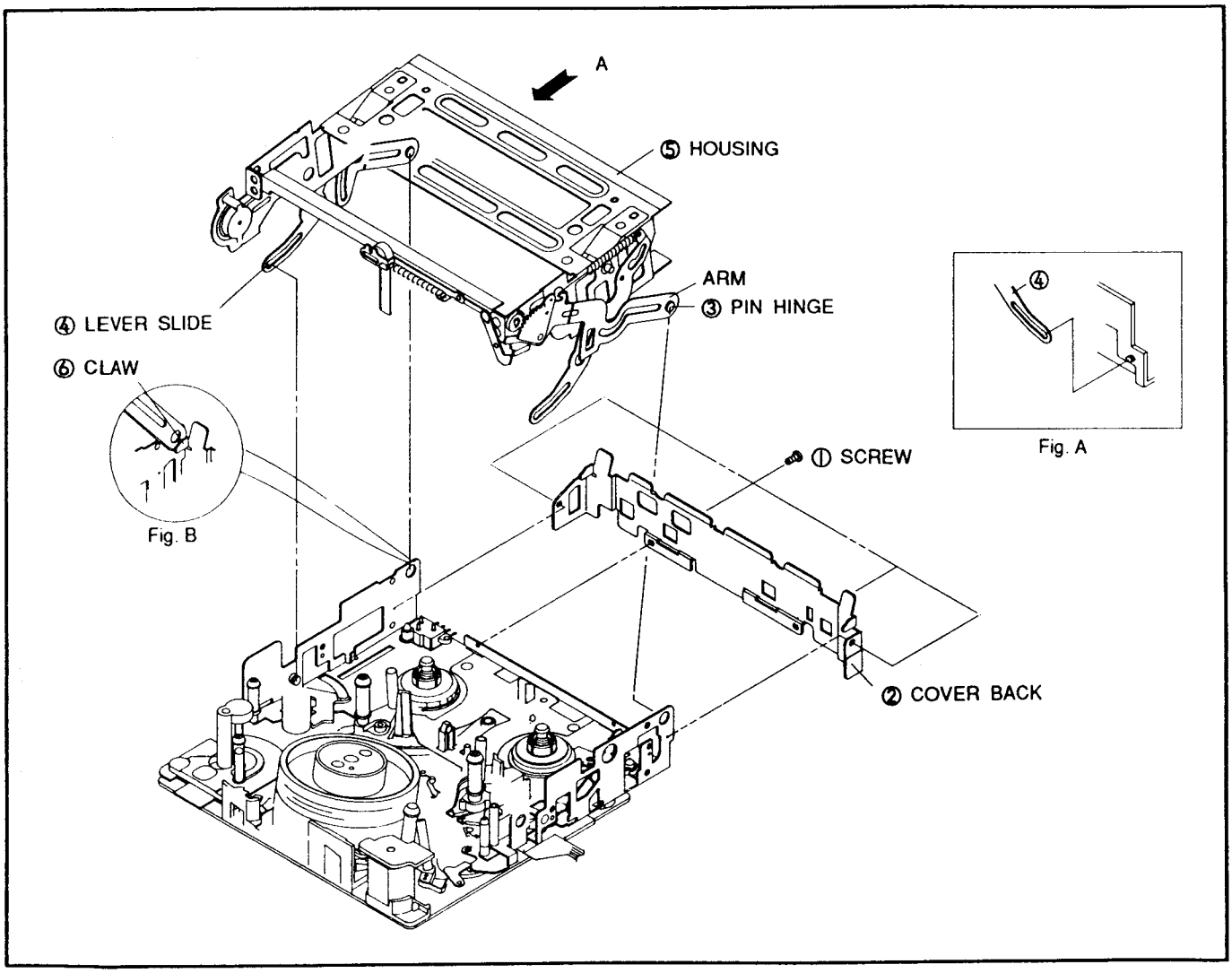


Fig. 16

4-2-5. Drum Ass'y

1. Removal

Note : Take extreme care when removing the Drum Ass'y ⑩.
Do not touch the Head Tip ⑪ during servicing.

1) Remove the Housing Ass'y. (Refer to section 4-2-4)
2) Remove one (1) screw ①, then remove the Guide Tape T ②.
3) Remove two (2) screws ④, ⑤, then remove the Base Drum ⑥.
4) Remove one (1) screw ⑦, then remove the Earth Brush ⑧.
5) Remove two (2) screws ⑨, then remove the Drum Ass'y ⑩.

2. Reassembly

1) Mount the Drum Ass'y ⑩ to the Boss ⑫ of Base Drum ⑥ and secure two (2) screws ⑨.
2) Mount the Earth Brush ⑧ then secure one (1) screw ⑦.
3) Mount the Base Drum ⑥ to the Main Deck and then secure two (2) screws ④, ⑤.
4) Mount the Guide Tape T ② and then secure one (1) screw ①.

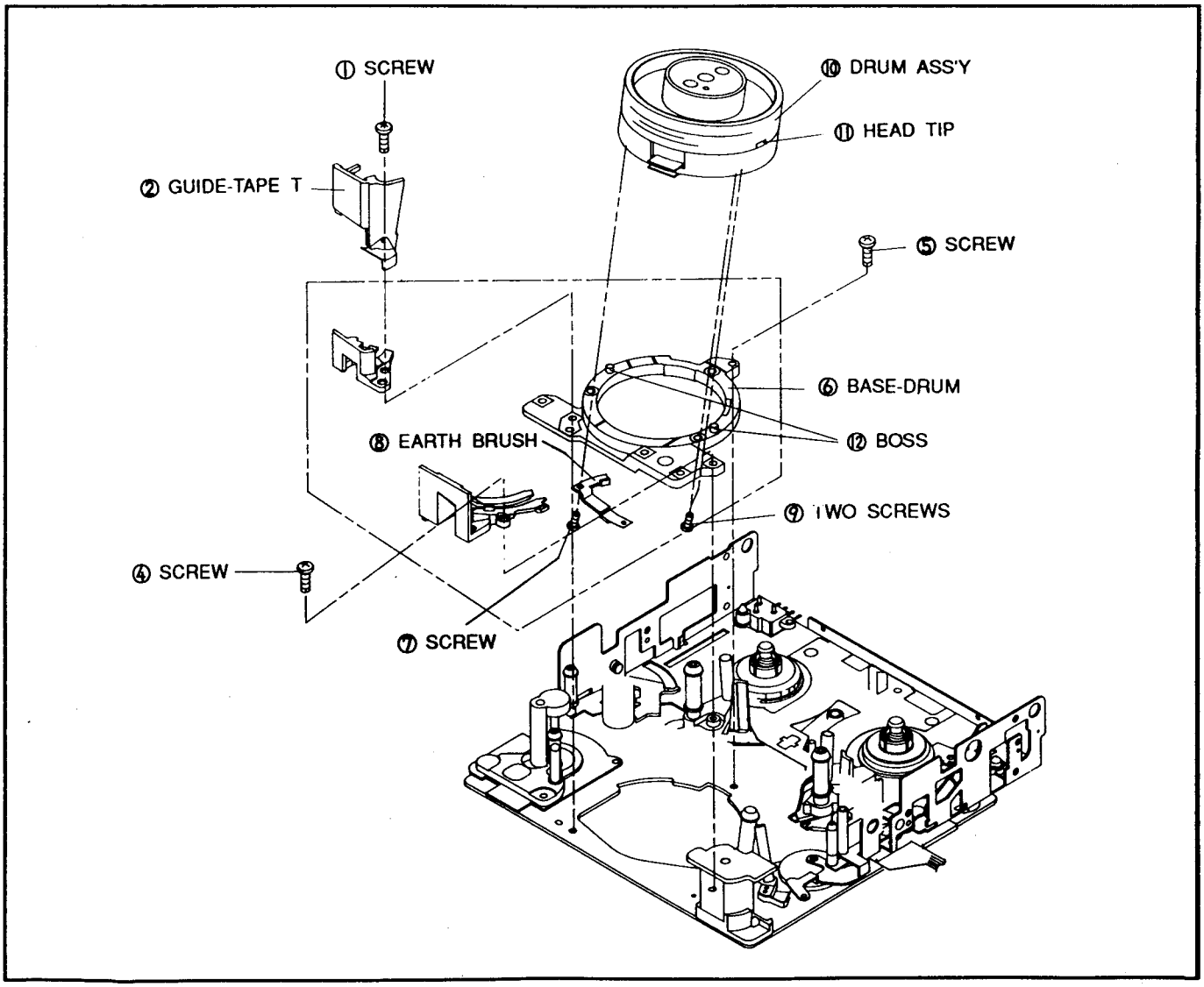


Fig.17

4-2-6. Idler Ass'y

1. Removal

1) Remove two (2) screws ① and one (1) screw ⑨ and then remove the Cover Reel ③ from the Deck.
2) Take out the Holder LED ② from the Cover Reel ③.
3) Remove the Washer Slit ④ from Idler Ass'y ⑤ and then remove the Idler Ass'y ⑤ from the Pin ⑥.

2. Reassembly

1) Fit the Idler Ass'y ⑤ into the Pin ⑥, and then install it with the Washer Slit ④.
2) Mount the Cover Reel ③ to the Deck Ass'y.
3) At that time, place the Pin Idler ⑦ into the Guide Home ⑧ of the Cover Reel ③.
4) Mount the Holder LED ② to the Cover Reel ③.
5) Fasten two (2) screws ① and one (1) screw ⑨.

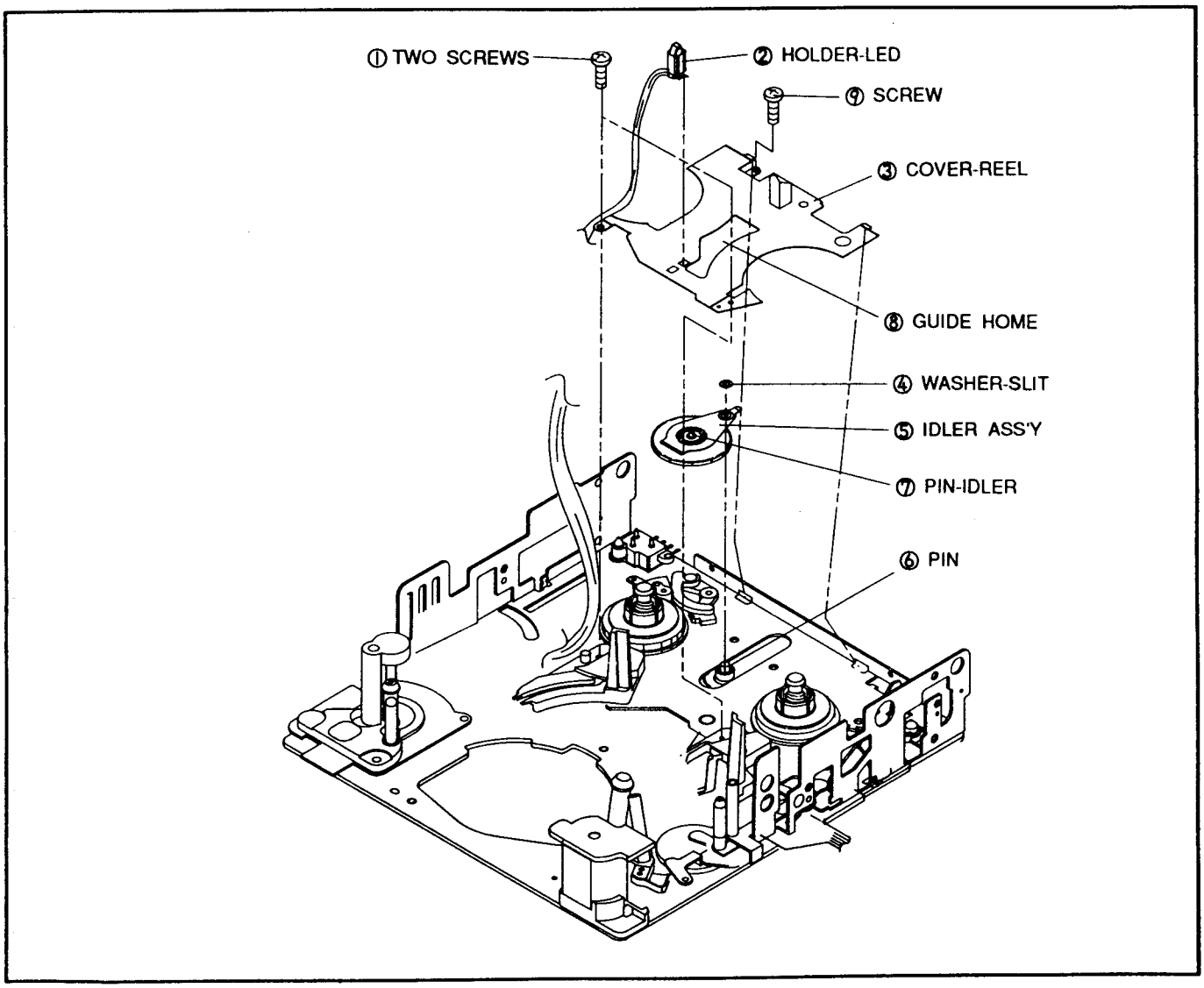


Fig. 18

4-2-7. Sub Deck Ass'y Removal from the Main Deck Ass'y

1. Removal

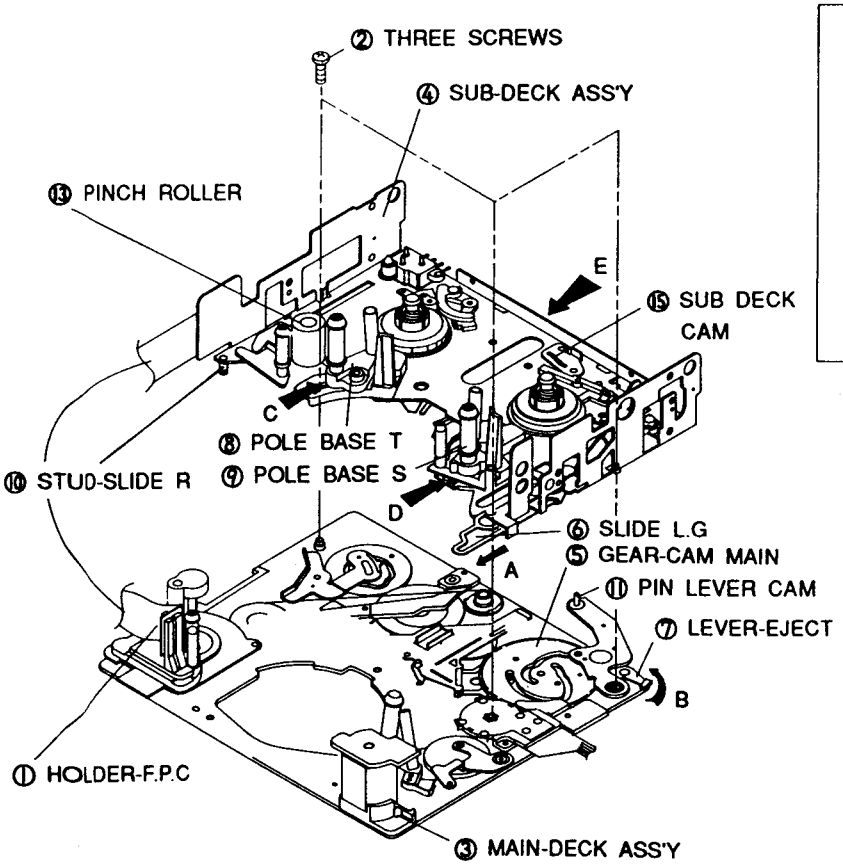
Note :
1) When disassembling, take care not to damage the other parts.
2) Always remove the Sub Deck Ass'y when Deck Ass'y is in eject mode.

1) To remove Sub Deck Ass'y, remove Idler Ass'y first. (Refer to 4-2-6)
2) Take out the Holder F.P.C ① from the Main Deck Ass'y ③.
3) Remove three (3) screws ②.
4) Remove the Sub Deck Ass'y ④ from the Main Deck Ass'y ③.

2. Reassembly

1) Align main base hole with Gear-cam main holes as shown in the Fig. A. (Refer to install point)
2) Push the Pole Base T ⑧ and the Pole Base S ⑨ in the direction of arrows "C", "D".
3) Position out the Slider L.G ⑥ toward "A", and then push the Lever Eject ⑦ toward "B".
4) Put in the Stud Slide R ⑩ to the slider area of Main Base as described in Fig. B.
   Insert the pin Lever Cam ⑪ into the Sub Deck Cam ⑮.
5) Fit the Slider L.G ⑥ to the Bush screw of the Main Deck and then confirm whether the Plate Slide ⑭, and the Arm Loading are fixed correctly as shown in the Fig C.
6) Install the Sub Deck with three (3) screws ②.
7) Install the Holder F.P.C ① to the Main Deck Ass'y ③.

Note : After assembling the Sub-Deck Ass'y, make sure that the Sub-Deck Ass'y is performing correctly with power supply 3V to loading Motor change voltage direction.



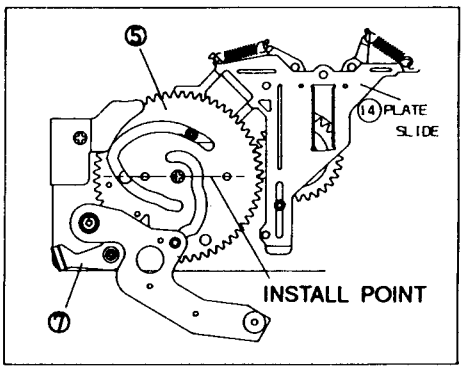


Fig. A

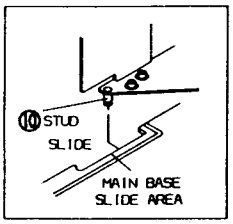


Fig. B

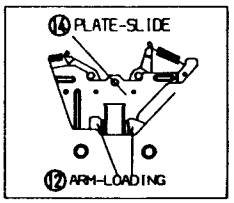


Fig. C

Fig. 19

4-2-8. Arm Pole Base S, Arm Pole Base T

1. Removal

1) Take out the Pole Base S ① from Rail S ③ in the direction of arrow "B", and remove the Arm Loading S ⑤ from Sub Deck as described in Fig. A.
2) Take out the Pole Base T ② from Rail T ④ in the direction of arrow "A", and remove the Arm Loading T ⑥ from Sub Deck as described in Fig. A.

2. Reassembly

1) Insert the Arm Loading S to the Sub Deck, and turn in the direction of arrow "C", and then put in the two pins of the Pole Base S ① to the Rail S ③ in the opposite direction of arrow "B".
2) Insert the Arm Loading T to the Sub Deck (Refer to Fig. A and turn in the direction of arrow "D", and then put in the two pin of the Pole Base T ② to the Rail T ④ in the opposite direction of arrow "A".

Note : When assembling, be careful not to stain the Roller and slant Pole of the Pole Base from the oil, grease, etc.

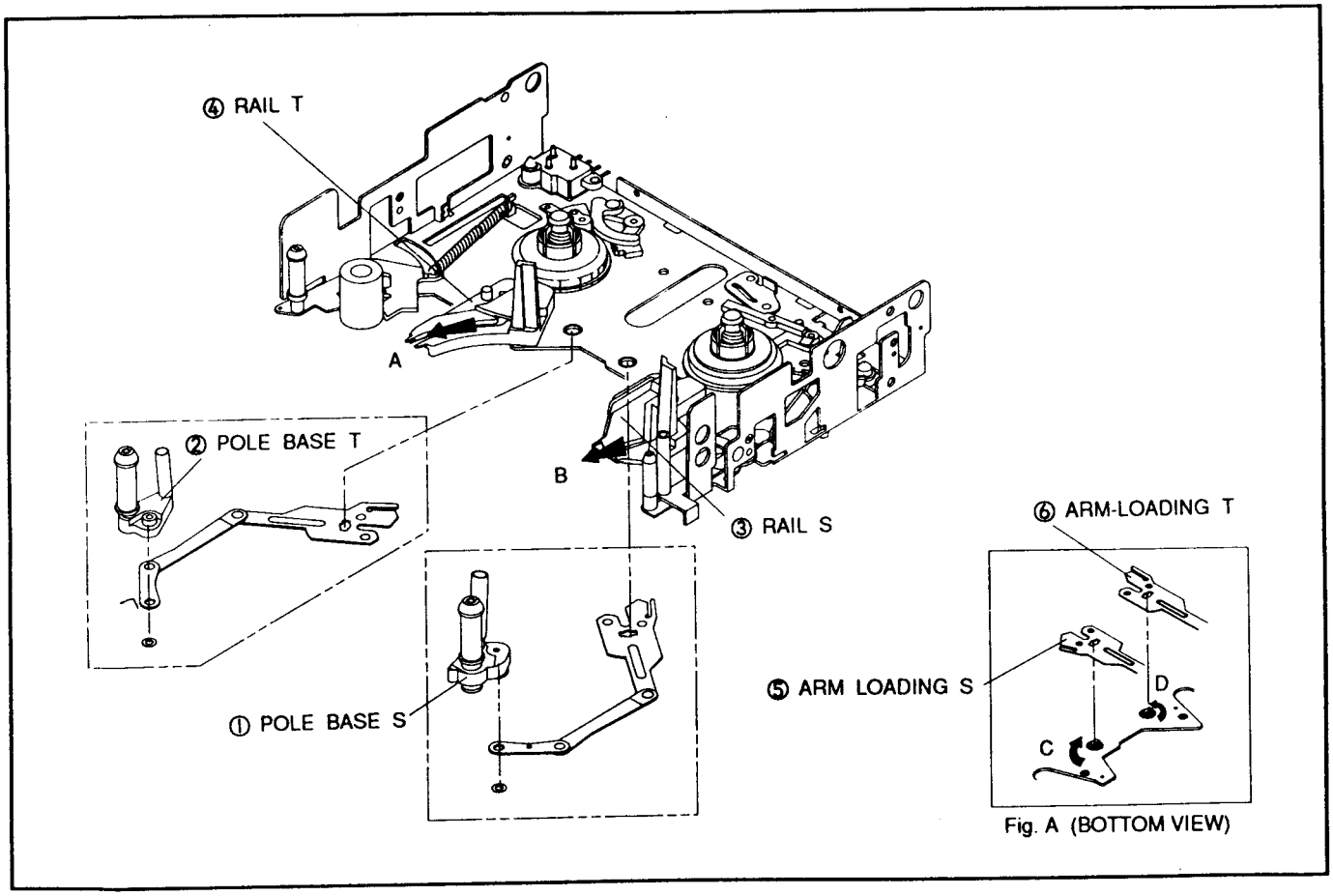


Fig. A (BOTTOM VIEW)

Fig. 20

4-2-9. Pinch Roller Ass'y & Arm Review Ass'y

1. Removal

1) Remove two (2) Washer Slit ①, and then remove the Arm Review Ass'y ② and Spring Review Arm ③.
2) Take out the Spring Lever Pinch ⑤ from Claw ④, then remove the Arm Pinch Roller Ass'y ⑥.

2. Reassembly

1) Put the Arm Pinch Roller Ass'y ⑥ in the bush, and attach the Spring Lever Pinch ⑤ on the Claw ④.
2) Install it with the Washer Slit ①.
3) Put the Spring Review Arm ③ in the bush, and then hook it to the Spring Hanger Area ⑧ of the Arm Review Ass'y ② and to the notch of Stud-Slide ⑦.
4) Install the Arm Review Ass'y ② with the Washer Slit ①.

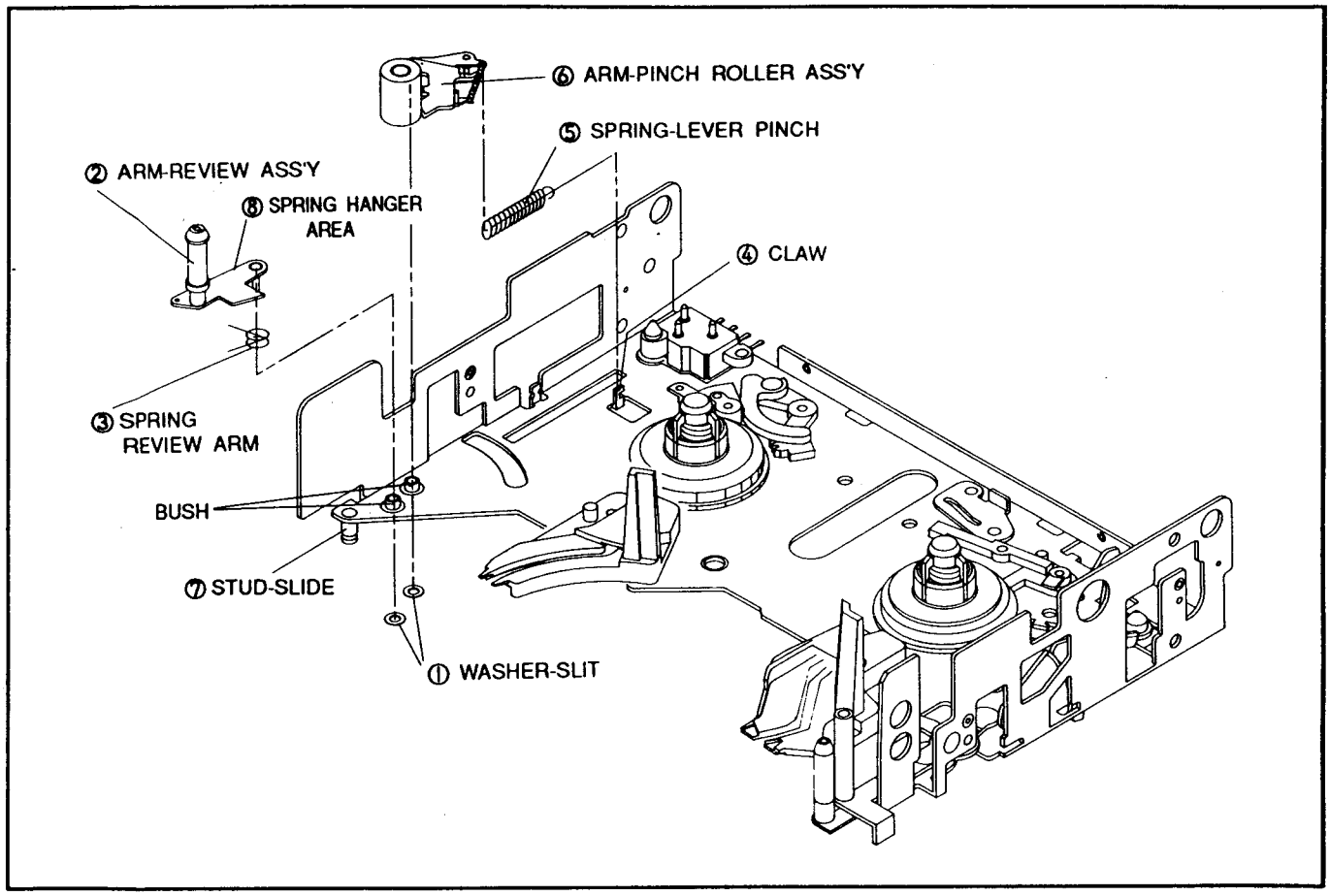


Fig. 21

4-2-10. Arm Tension Ass'y, Lever Guide Ass'y

1. Removal

1) Remove the Washer Slit ① and then remove the screw ③.
2) Remove the spring of the Arm Tension Ass'y from the Claw ⑧, and then remove the Arm Tension Ass'y ⑤ from the Bush ②.
3) Release the Hook ⑬ of the Arm Tension Ass'y from the Hole ⑫, and then remove the Ass'y Band Tension.
4) Remove the Lever Guide Ass'y ⑥, and then remove the Slide L.G ⑦ from the Sub Deck Ass'y.

Note : Be careful not to damage and stain the Arm Tension's Pole part and Lever Guide Assy's Roller part with oil.

2. Reassembly

1) Mount the Slide L.G ⑦ in order to position the Bush into the Slit ⑨ of the Slide L.G ⑦.
2) Mount the Lever Guide Ass'y ⑥ to Bush ②, at that time place the Pin Lever Guide ⑪ into the Slit ⑩.
3) Mount the Arm Tension Assy's ⑤ shaft to the Lever Guide Ass'y ⑥ bush, and then attach the spring of the Arm Tension Ass'y ⑤ on the Claw ⑧.
4) Put in the Hook ⑬ of the Ass'y Band Tension ④ to the Hole ⑫, and then Mount the Ass'y Band Tension ④ so that its Dowel ⑮ aligns with the Slit 16 of the Sub Deck.
5) Install the Ass'y Band Tension ④ with the screw ③.
6) Install the Arm Tension Ass'y ⑤ with the Washer Slit ①.

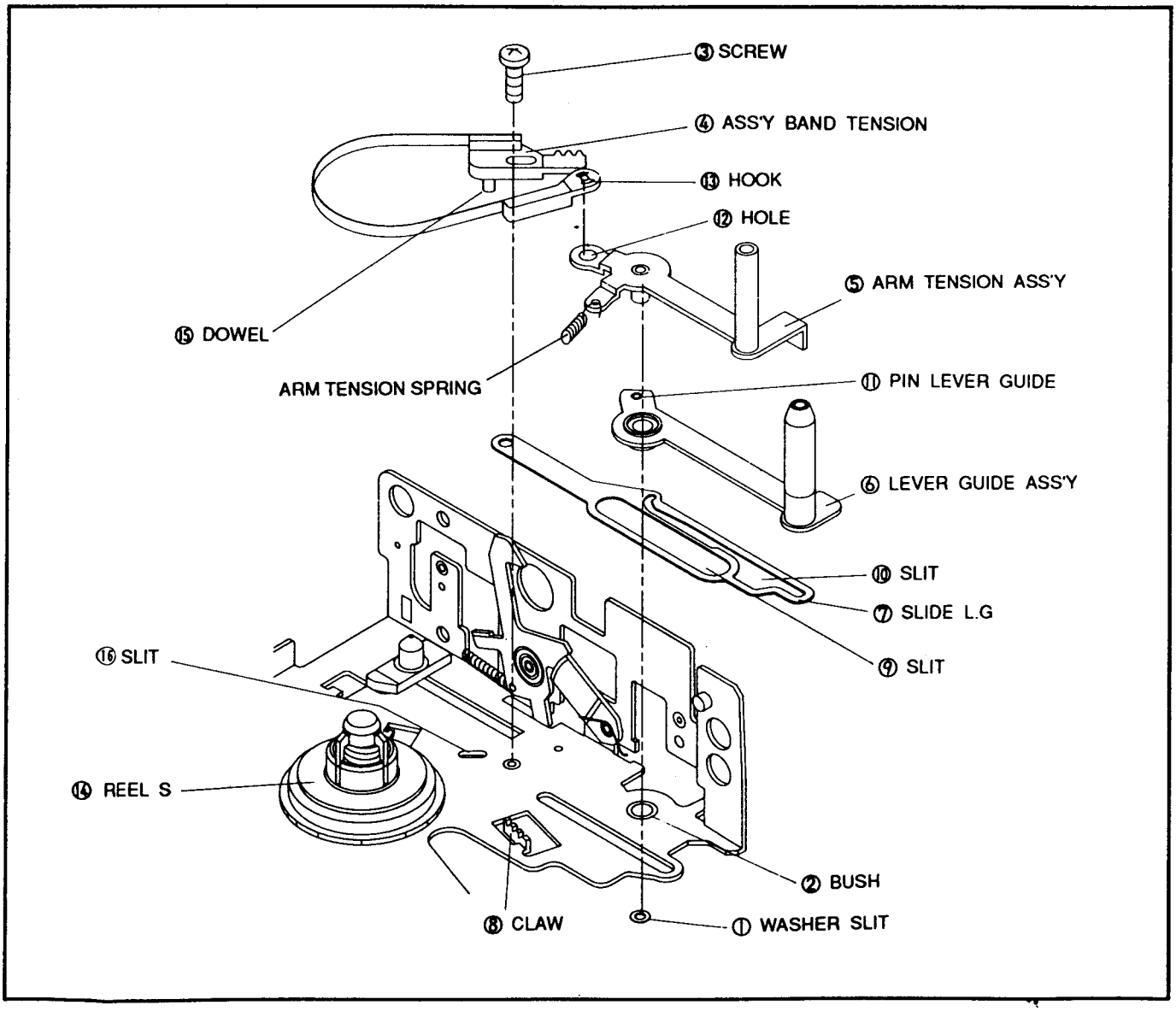


Fig. 22

4-2-11. Rail Guide S, Rail Guide T, Locker-Sub Chassis

1. Removal

1) Remove the Arm Pole Base S, Arm Pole Base T. (Refer to Fig. 20)
2) Remove the screw ①, then remove the Rail Guide T ②.
3) Remove the screw ③, then remove the Rail Guide S ④.
4) Remove the two screws ⑤, and then remove the Locker Sub Chassis ⑥.

2. Reassembly

1) Install in reverse order.

Note :
1) After installing the Rail Guide S ④ and the Rail Guide T ②, make sure that projection boss on the bottom side and the hole are aligned correctly.
2) Be sure to use the standard screws.

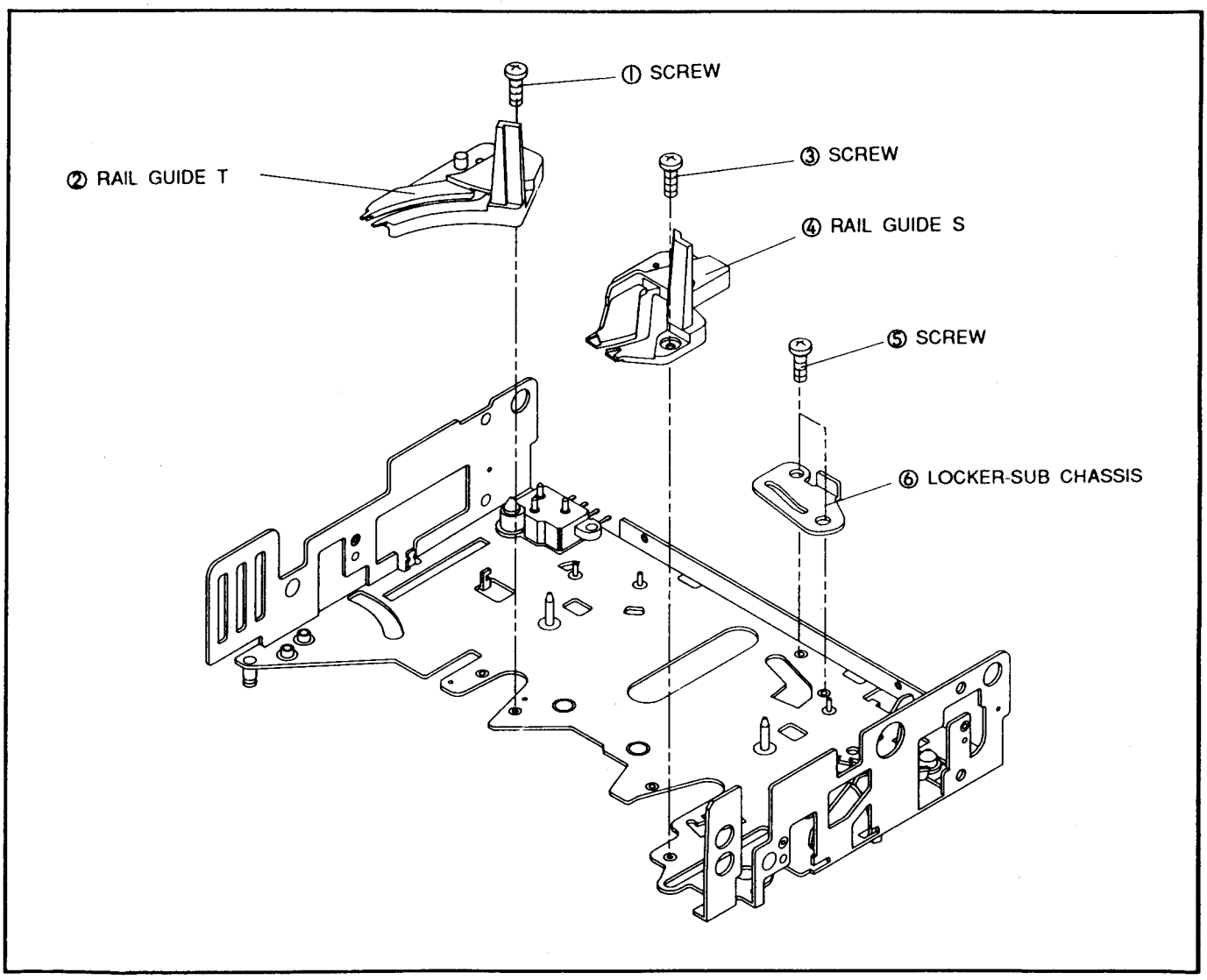


Fig. 23

4-2-12. Reel S, T Ass'y, Arm Clutch, Lever Brake S, T

1. Removal

1) Remove the Ass'y Tension Band. (Refer to Fig. 22)
2) Remove the Washer Slit ①, and then remove the Lever Brake S ② and Spring Lever Brake S ③.
3) Remove the Washer Slit ④, and Spring Arm Brake S ⑤, and then remove the Arm Brake S ⑥.
4) Lift up the Reel S ⑦, and then take out the Washer Plane ⑧.
5) Remove the Washer Slit ⑩, and then remove the Lever Brake T ⑪.
6) Remove the Washer Slit ⑫, and then remove the Ass'y Arm Clutch ⑬.
7) Lift up the Reel T ⑨.

2. Reassembly

1) Mount the Reel T ⑨.
2) Put the Ass'y Arm Clutch ⑬ into the slit Home ⑭ of the Sub Deck Ass'y, and then install it with the Washer Slit ⑫.
3) Put the Lever Brake T ⑪ into the Slit Home ⑮ of the Sub Deck Ass'y, and then install it with the Washer Slit ⑩.
4) Put in the Washer Plane ⑧ into shaft, and then mount the Reel S ⑦ to shaft.
5) Put in the Arm Brake S ⑥, and install the Spring Arm Brake S ⑤ (Refer to Fig. A), and then install it with the Washer Slit ④.
6) Put in the Spring Lever Brake S ③, and install the Lever Brake S ② (Refer to Fig. A), and then install the Washer Slit ①.

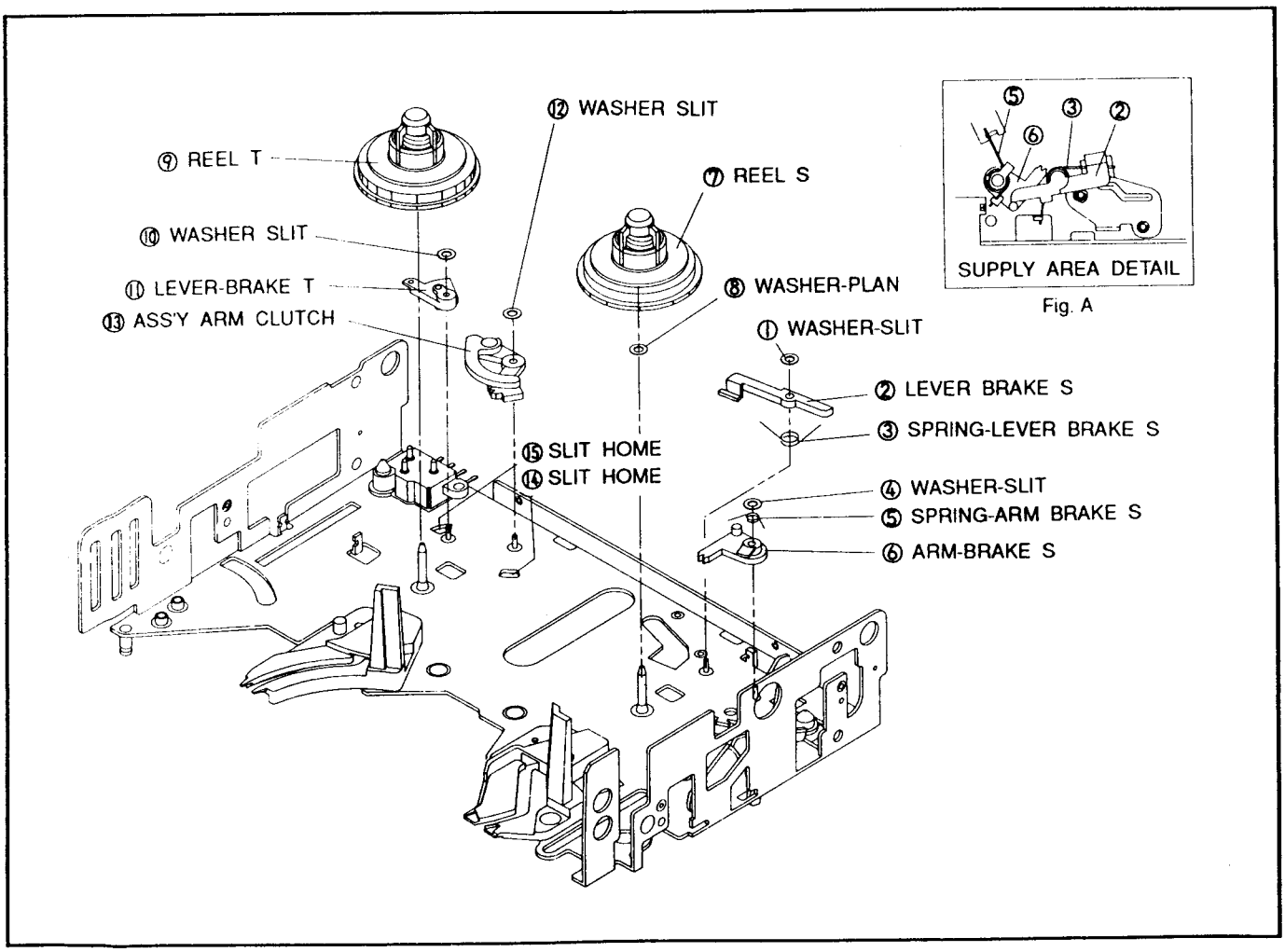


Fig. A

Fig. 24

4-2-13. Loading Motor

1. Removal

1) Remove four (4) screws ①, ②, ③, then remove the bracket deck "A" and "B" ④, ⑤.
2) Remove one (1) screw ⑥, then remove the motor loading ⑦.
3) Remove two (2) screws ⑧, then remove the Bracket loading ⑨.

2. Reassembly : Install in reverse order.

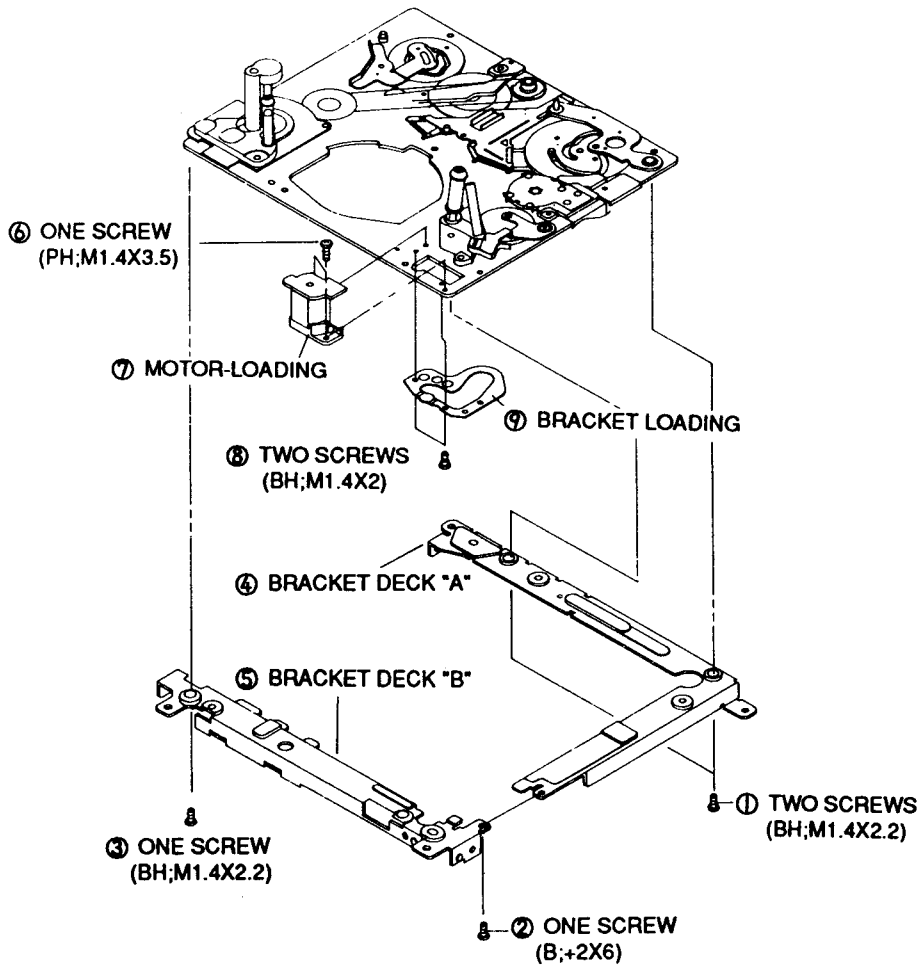


Fig. 25

4-2-14. Motor Capstan, Base Capstan Ass'y

1. Removal

1) Remove two (2) screws ① and one screw ⑦.
2) Remove the Base Capstan Ass'y ② from two (2) Bush ④, then remove Holder F.P.C ⑧ by releasing hook.
3) Remove the Motor Capstan ③ from the three Bush ④.

2. Reassembly : Install in reverse order.

Note : When assembling, make sure that the gears of Motor Capstan ③ and the gears of Gear Capstan Ass'y ⑥ are matched correctly.

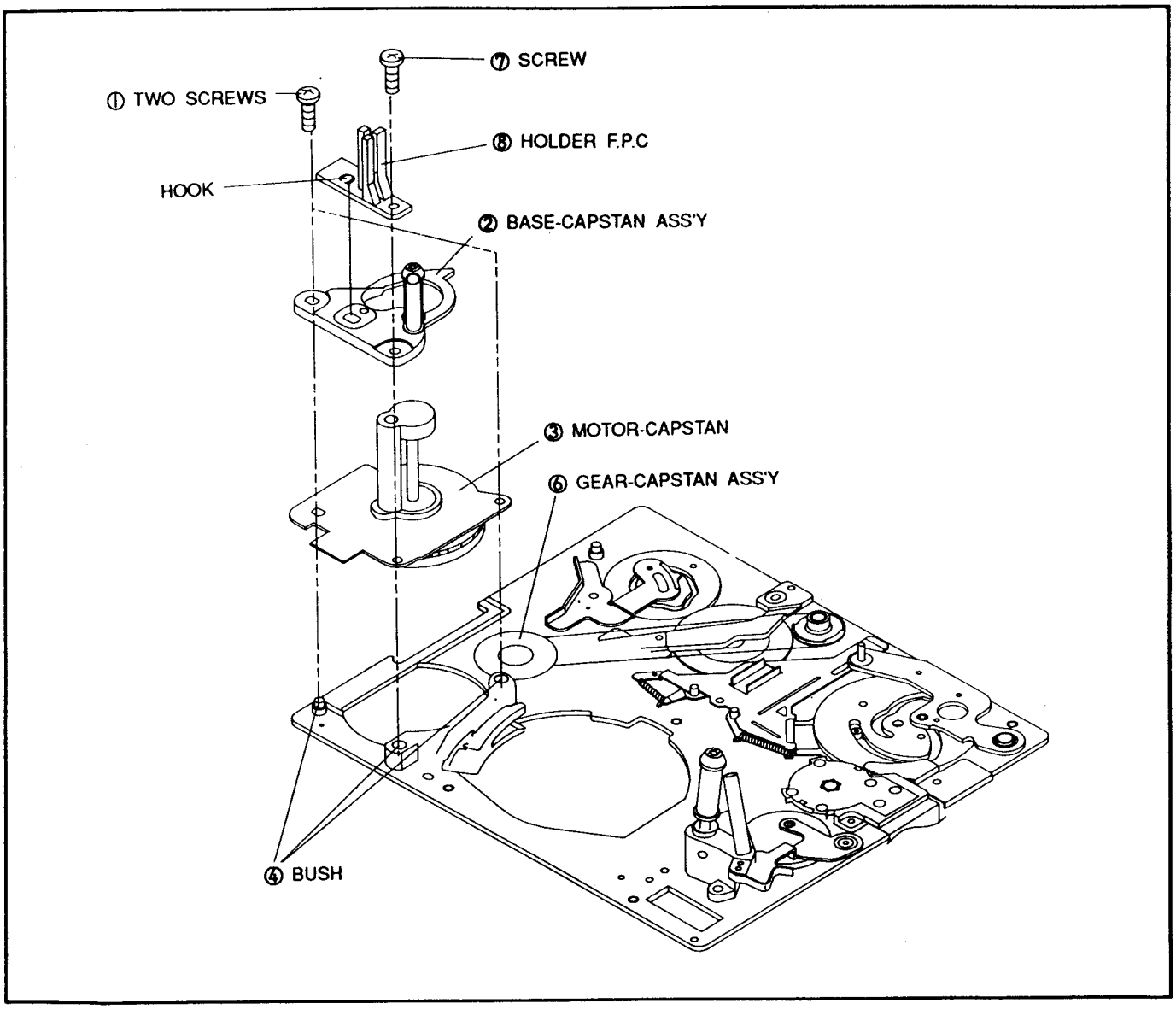


Fig. 26

4-2-15. Rail Middle R/L, Gear Capstan Ass'y, Gear Pully Ass'y, Cover Time Belt

1. Removal

1) Remove the Rail Middle R ①, then remove the screw ②, and then remove the Rail Middel L ③ from the Main Deck.
2) Remove the Gear Pully Ass'y ④ from the axle which is attached to the Belt Timing.
3) Remove the Washer Slit ⑥, then the Gear Capstan Ass'y ⑦ from the axle with the timing belt ⑤.
4) Remove the two (2) screws ⑧, then remove the Cover Timing Belt ⑨.

2. Reassembly

1) Mount the Cover Timing Belt ⑨ on the Main Deck, then secure it with the two (2) screws ⑧.
2) Fit the Gear Capstan Ass'y ⑦ to the axle, and then install the Washer Slit ⑥.
3) Attach the Belt Timing ⑤ between the low Gears of the Gear Capstan Ass'y ⑦ and the low Gears of the Gear Pully Ass'y ④, and then fit the Gear Pully Ass'y ④ into the axle with the Belt Timing ⑤ attached. (See Fig. A)
4) Mount the Rail Middle L ③ on the Main Deck, then secure it with the one (1) screw ②, and then Mount the Rail Middle R ① to the Bush.

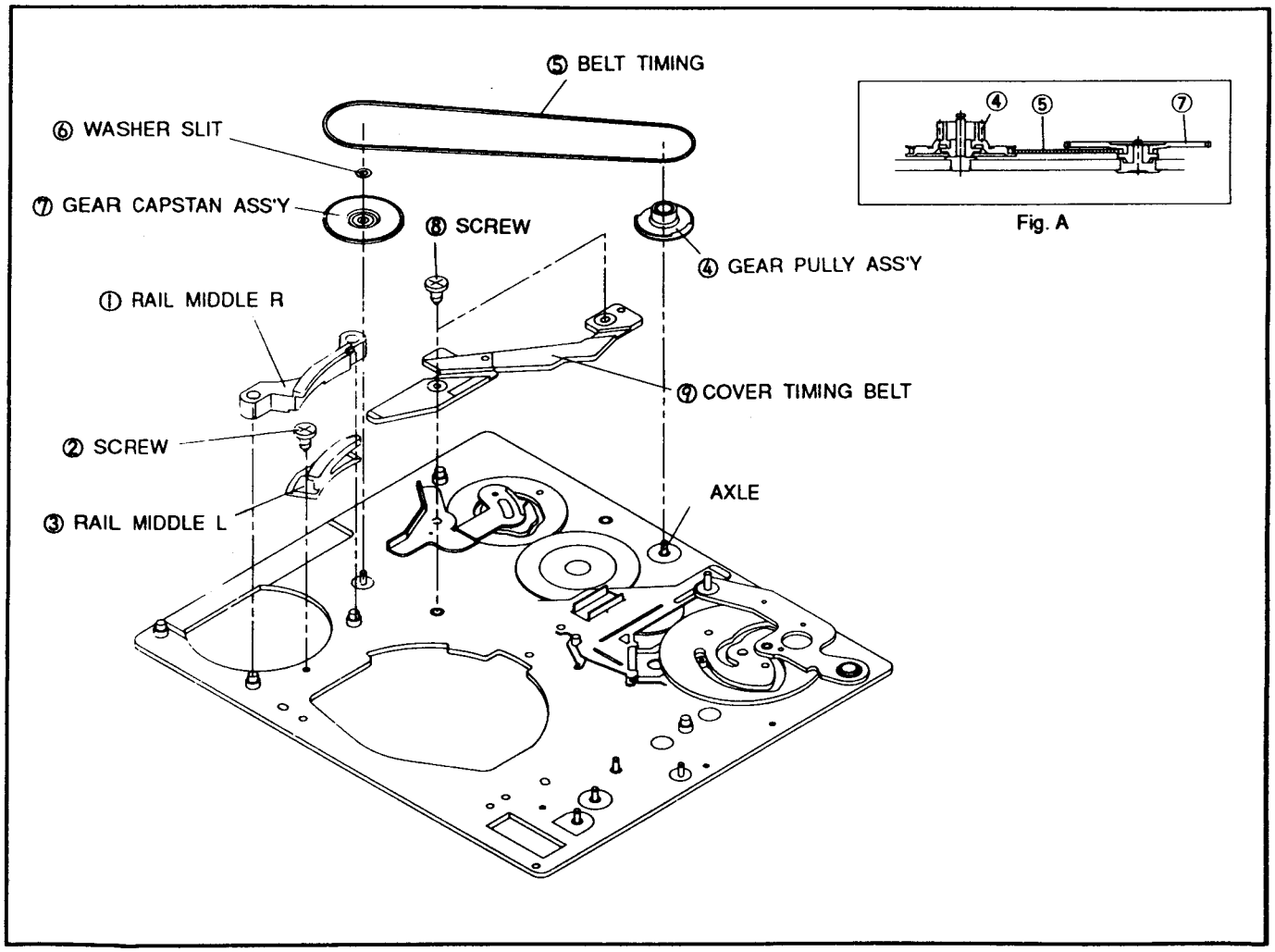


Fig. 27

4-2-16. Lever Cam Pinch Ass'y, Gear Cam Pinch

1. Removal

1) Remove the two (2) screws ①, then remove the Lever Cam Pinch ② from the Main Deck.
2) Remove the Gear Cam Pinch ③ from the Main Deck.

2. Reassembly

1) Align the hole of Gear Cam Pinch ③ with the hole of Main Base. (Refer to Timing "A")
2) Insert the Lever Cam Pinch ② into the slit of Gear Cam Pinch ③ and secure it with two (2) screws. (Refer to timing "B")

Note : When installing the Gear parts, refer to Fig. 31.

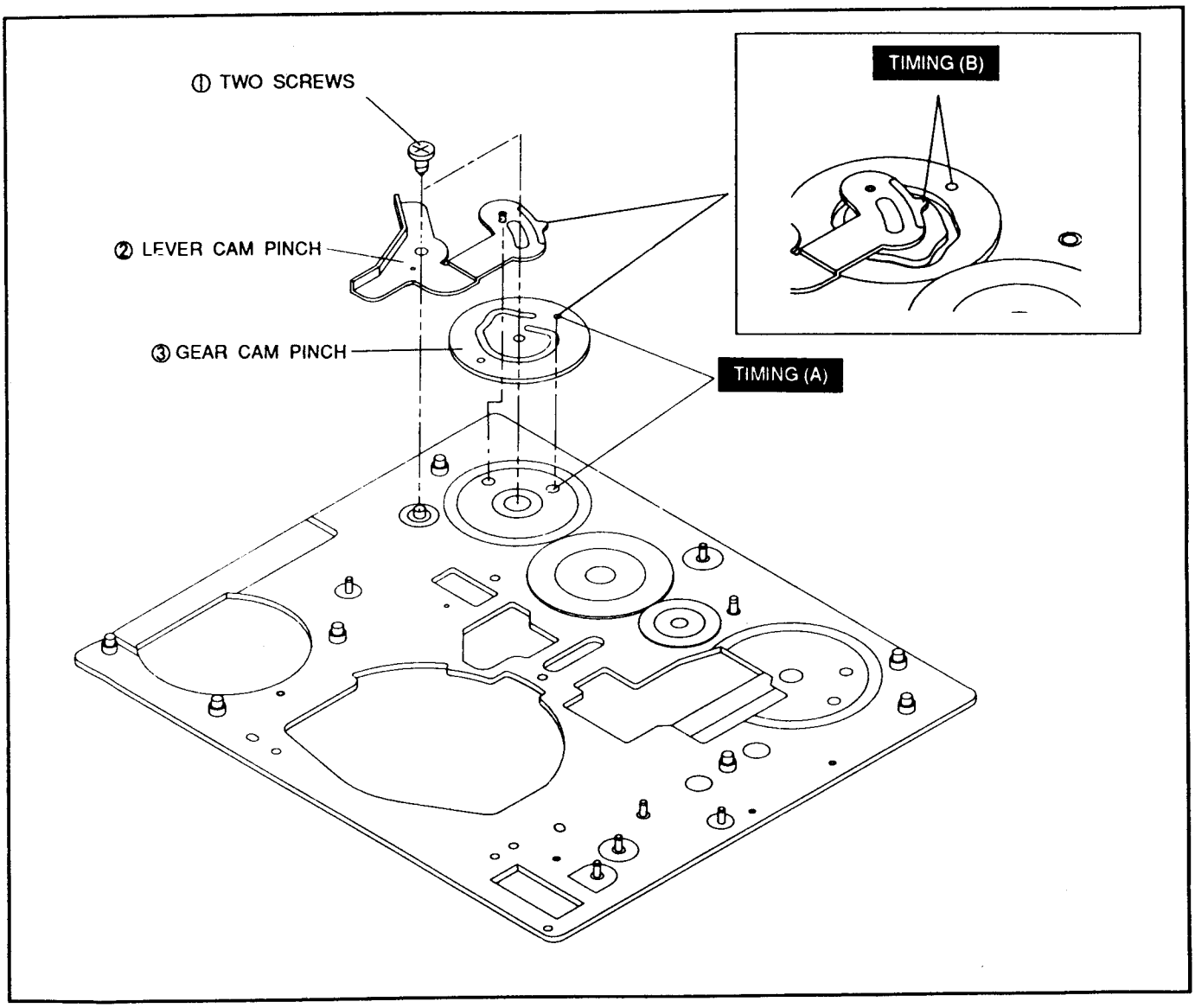


Fig. 28

4-2-17. Pole Base Sub Ass'y, Switch Mode Ass'y, Lever Cam Tension, Gear Loading A, Gear Loading B, Gear Cam Tension

1. Removal

1) Remove one (1) screw ①, then remove the Pole Base Sub Ass'y ②.
2) Remove one (1) screw ③, then remove the Guide Mode Switch ④.
3) Remove one (1) screw ⑤, then remove the Switch Mode Ass'y ⑥.
4) Remove the Washer Slit ⑦, then remove the Lever Cam Tension ⑧.
5) Remove the Washer Slit ⑨, then remove the Gear Loading B ⑩.
6) Remove the Washer Slit ⑪, then remove the Gear Cam Tension ⑫.
7) Remove the Washer Slit ⑬, then remove the Gear Loading A ⑭ of the axle.

2. Reassembly

1) Mount the Switch Mode Ass'y ⑥ as described in Timing point (F) of Fig. 31, then secure it with one (1) screw ⑤.
2) Mount the Guide Mode Switch ④, then secure it with one (1) screw ③.
3) Fit the Gear Loading A ⑭ into the axle and then install it with the Washer Slit ⑬.
4) Mount the Gear Cam Tension ⑫ as described in Timing point (G) of Fig. 31, and then install it with the Washer Slit ⑪.
5) Fit the Gear Loading B ⑩ into the axle, then install it with the Washer Slit ⑨.
6) Mount the Lever Cam Tension ⑧ as described in Timing (H) of Fig. 31, then install it with the Washer Slit ⑦.
7) Align the dowel of the Pole Base Sub Ass'y ② with the Guide Hole ⑮, then mount the Pole Base Sub Ass'y ②, and secure it with the screw ①.

Note : Confirm the Timing point of the Switch Mode Ass'y (See Fig. 31).

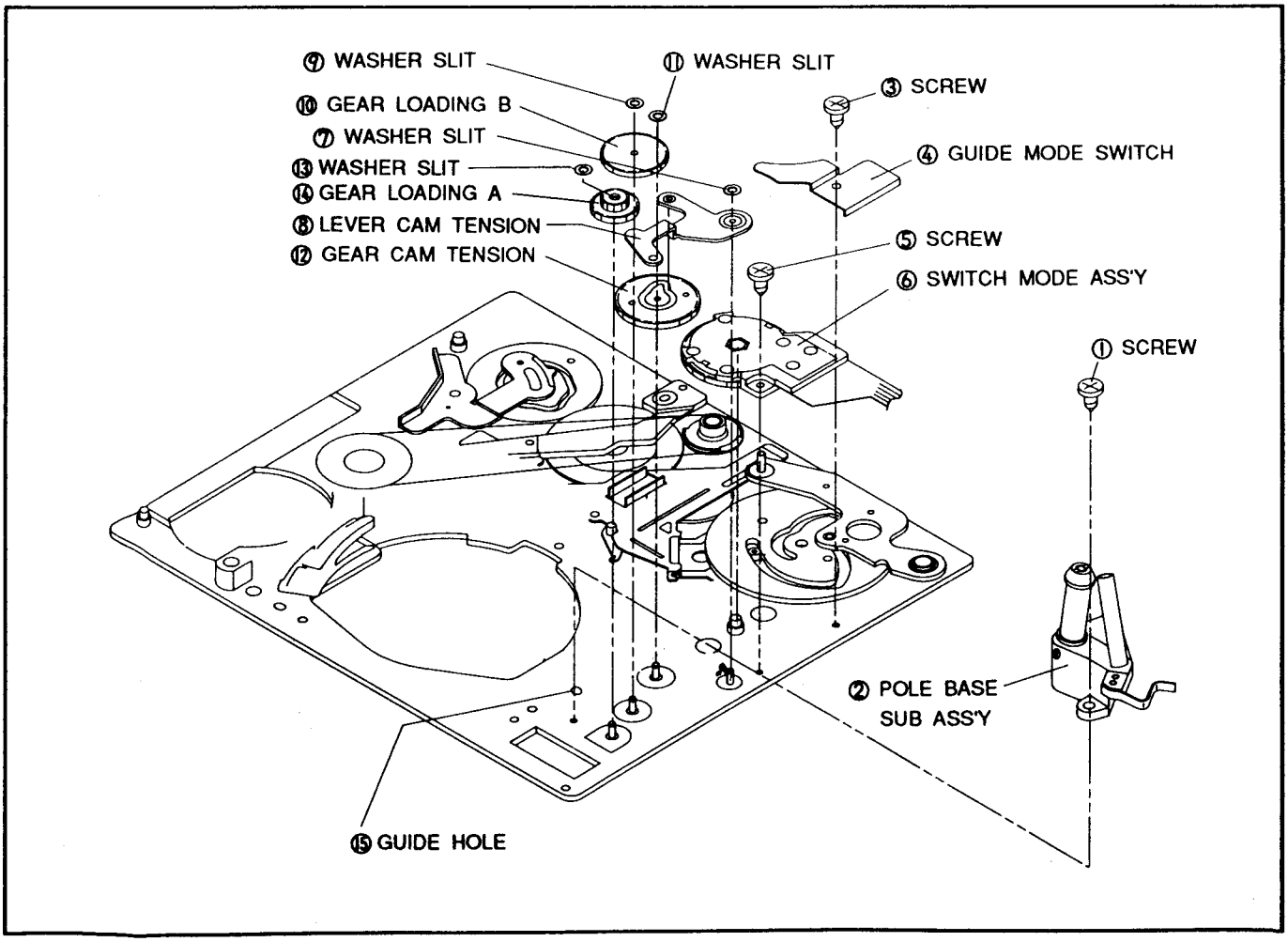


Fig. 29

4-2-18. Lever Cam, Lever Eject, Gear Cam Main, Plate Slider Ass'y

1. Removal

1) Remove the Lever Cam Ass'y ① and Roller Cam Main ②.
2) Remove the Lever Eject ③.
3) Remove one (1) screw ④, then remove the Gear Cam Main ⑤.
4) Push the Plate Slide Ass'y ⑦ in the direction of arrow A and remove Plate Slide Ass'y ⑦ and the Roller Cam Main ⑥.

Note :
a) To remove the Gear-Cam Main, remove the Guide Mode Switch first. (Refer to 4-2-17)
b) When removing the Gear Cam Main ⑤, and Lever Cam Main ① from the Main Deck, take care not to lose the Roller Cam Main ②, ⑥. (Refer to Fig. A and Fig. B)

2. Reassembly

1) Insert the Roller Cam Main ⑥ to the Plate Slider Ass'y ⑦ as described in Fig. A, then Mount it to the Main Deck.
2) Pull the Plate Slider Ass'y ⑦ in the direction of arrow B.
3) Install the Gear Cam Main ⑤ so that the hole of Gear Cam Main ⑤ and the hole of Main Base are aligned as shown in the "Timing (D)", then secure it with one (1) screw ④.
4) Install the Lever-Eject on the pin of the Main Base.
5) Insert the Lever Cam Ass'y ① into the groove of the Gear Cam Main ⑤ as shown in the Timing (E).

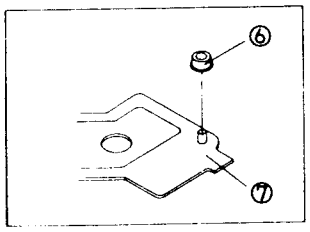


Fig. A

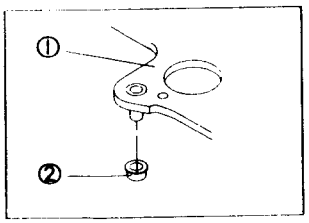


Fig. B

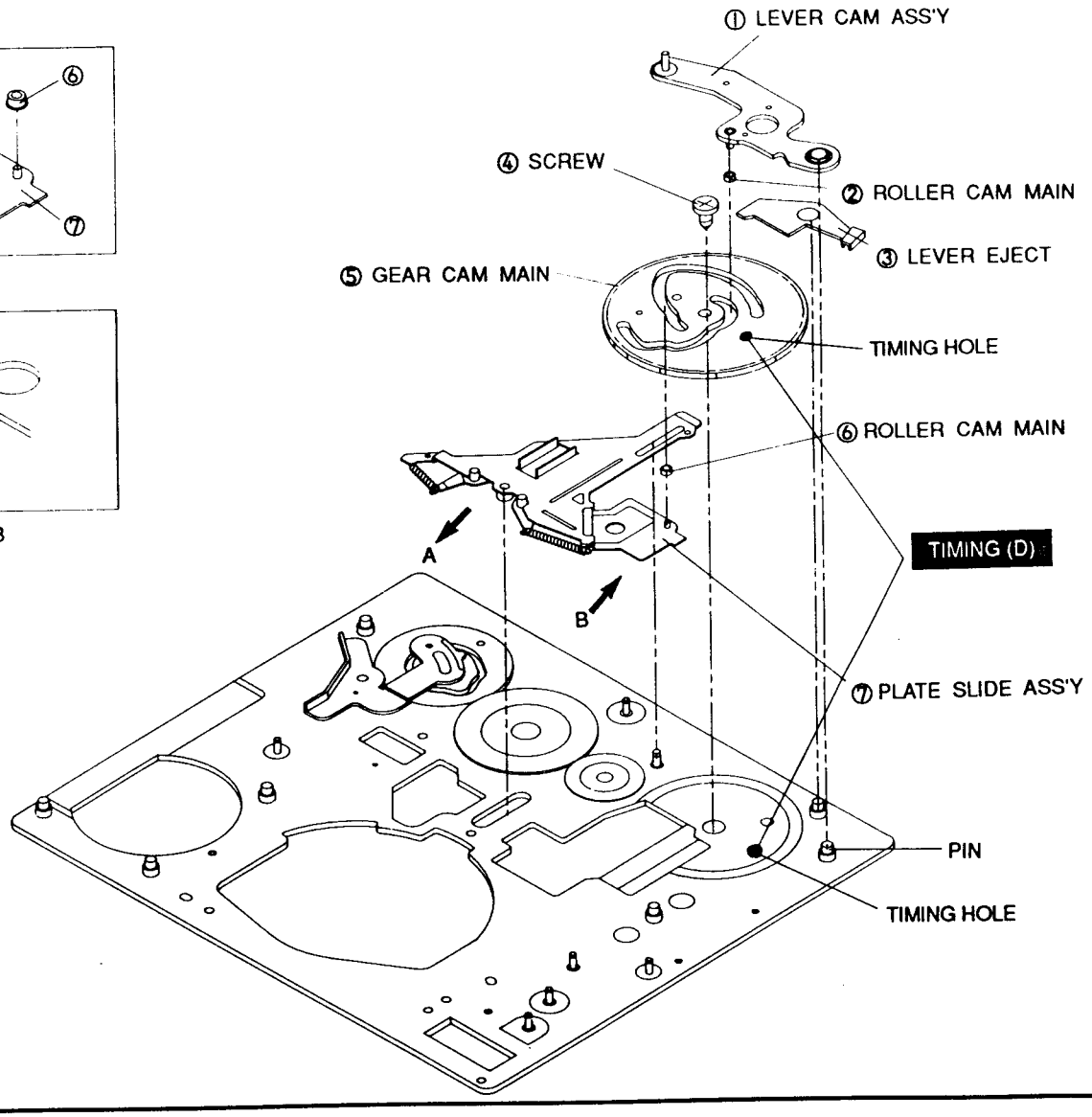


Fig. 30

4-2-19. Timing Point in Main Deck

1. Timing Point Explanation

TIMING A : Align install Hole of Gear Cam Pinch ⑦ with Hole on Main Base.
TIMING B : When installing Lever Cam Pinch to Gear Cam Pinch, Timing "B" point of Cam as described in Fig. 31.
TIMING C : After assembling Plate Slider Ass'y ⑥, when installing Gear Cam Main ④, pull the plate Slider Ass'y ⑥ toward arrow and then install the Gear Cam Main ④.
TIMING D : Align Hole of Gear Cam Main ④ with large hole on Main Base.
TIMING E : When installing Lever Cam ⑤ to Gear Cam Main ④, Timing "E" point of Cam as described in Fig. 31.
TIMING F : When assembling the Gear Cam Main ④ and the Mode Switch Ass'y ③.
TIMING G : When assembling the Mode Switch Ass'y ③ and the Gear Cam Tension ①.
TIMING H : When installing Lever Cam Tension ② to Gear Cam Tension ①, Timing "H" point of Cam as described in Fig. 31.

Note : 1) Gear Train is installed A, B, C, D and E in order.
2) If install points (Timing Points) of Gear Trains are mismatched, malfunction and part damage may occur. Special precaution is required to prevent it.

2. Important timing to assemble Sub-Deck

After finishing assembly of Gear Train, rotate Gear Cam Main ④ to align 3 holes of install point, as desciebed in Fig. A, in order to assemble Sub Deck.

Note : If loading Motor is installed, Gear Train will not be working. But Loading Motor can be moved by Power Supply giving 3V to Loading Motor.

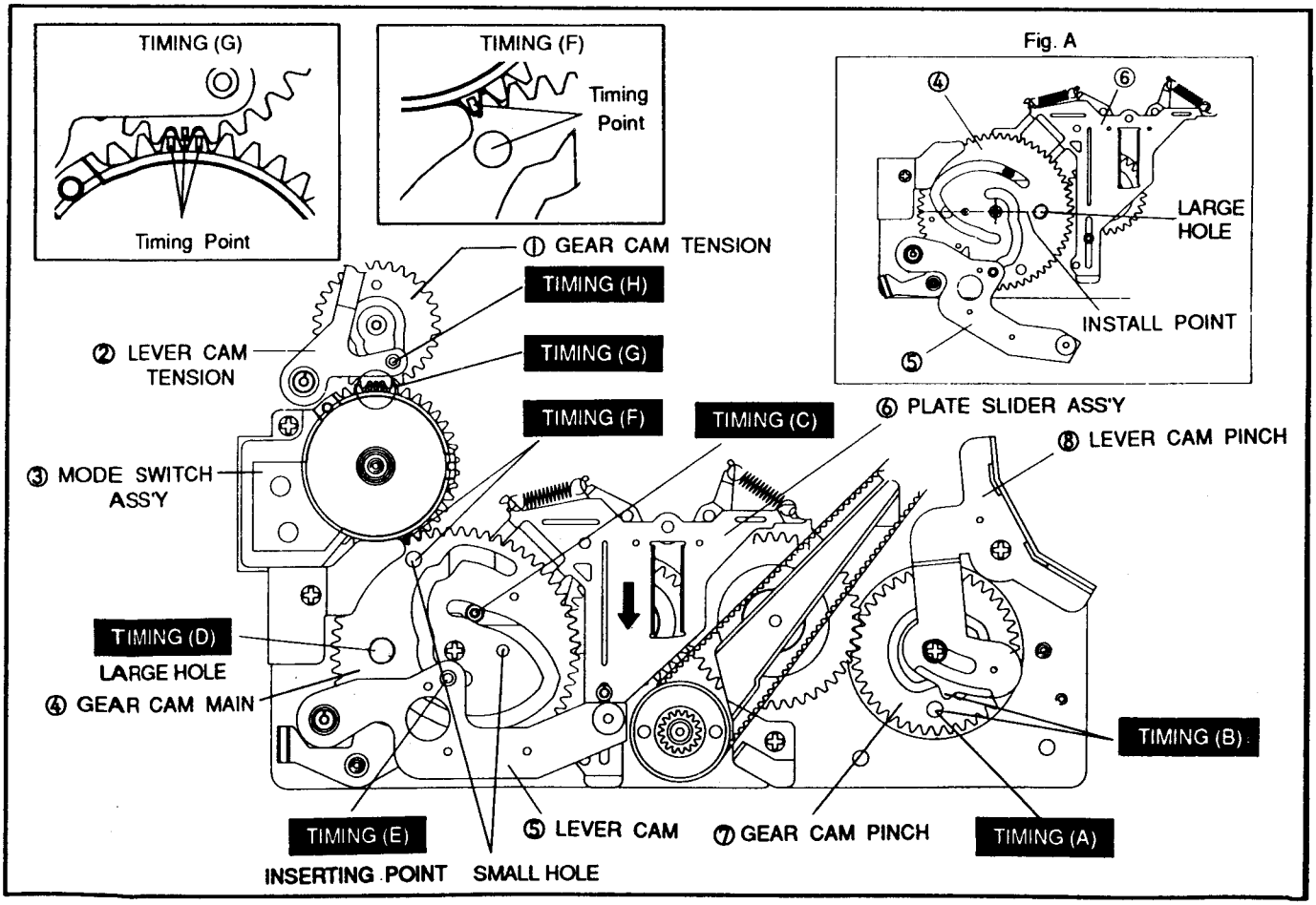


Fig. 31

5. ABBREVIATIONS

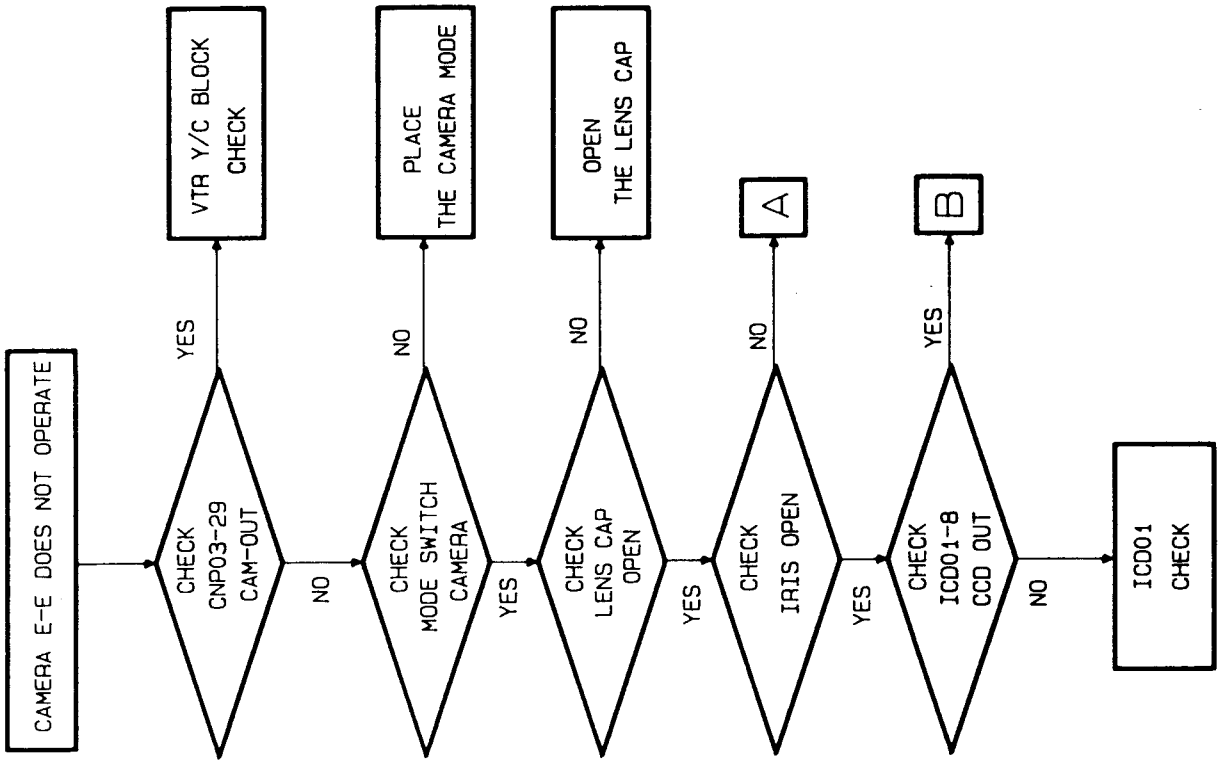
ABBREVIATION	EXPLANATION
ACC	Automatic Color Control
ACK	Automatic Color Killer
ADJ	Adjustment
A/D	Analog/Digital
AE	Auto Exposure
AF	Auto Focus
AFC	Automatic Frequency Control
AFM	Audio Frequency Modulation
AGC	Automatic Gain Control
AMP	Amplifier
APC	Automatic Pedestal Control
ASS'Y	Assembly
ATF	Automatic Track Finding
ATT	Attenuator
AUTO	Automatic
AUX	Auxiliary
BATT	Battery
BF	Burst Flag
BFG	Burst Flag Gate
BLC	Back Light Compensation
BLK	Black
BPF	Band Pass Filter
BUFF	Buffer
B/W	Black/White
CAM	Camera
CAMCORDER	Camera Recorder
CAP	Capstan
CAR	Carrier
CASS	Cassette
CBA	Circuit Board Assembly
CCD	Charge Coupled Device
CH	Channel
CHROMA or C	Chrominance
CLK	Clock
CLP	Clamp
CM	Capstan Motor
CN	Connector
CNR	Chroma Noise Reduction
COM	Common
COMB	Comb Filter
COMP	Composite
CRT	Cathode Ray Tube
CS	Chip Selector
CTL	Control
D/A	Digital/Analog
dB	Decibel (Measurement Unit)
DC	Direct Current
DD	Direct Drive
DEMOD	Demodulator
DET	Detect
DL	Delay Line

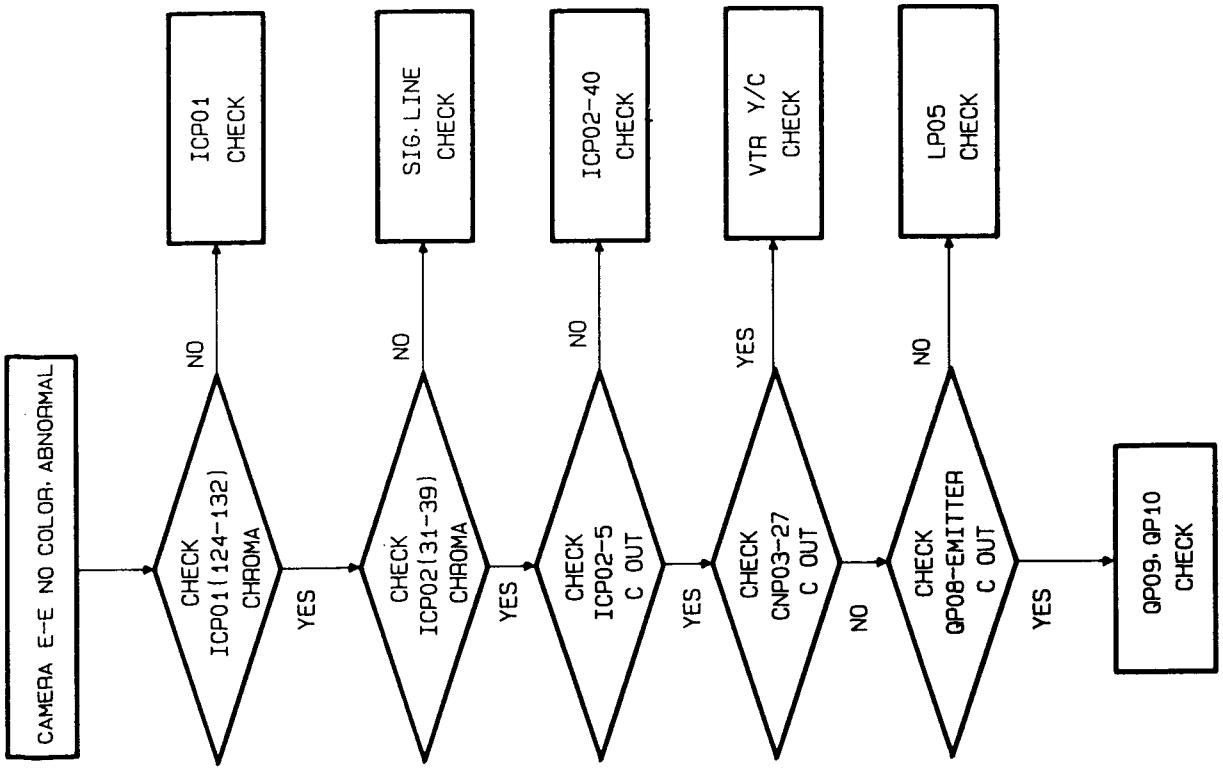
ABBREVIATION	EXPLANATION
DOC	Drop Out Compensater
DY	Deflection Yoke
E-E	Electronic to Electronic
EMP	Emphasis
ENV	Envelope
EQ	Equalizer
EXT	External
EVF	Electronic View Finder
F/E	Flying Erase
FET	Field Effect Transistor
FF	Fast Forward, Flip-Flop
FG	Frequency Generator
FL	Filter
FM	Frequency Modulation
FPC	Flexible Pattern Circuit
FPS	Forward Picture Search
Freq.	Frequency
FSC	Frequency Sub Carrier
FWD	Forward
GC	Gain Control
GEN	Generator
GND	Ground
GRN	Green
GRY	Gray
HD	Head, Horizontal Drive
HG	Hall Generator
HPF	High Pass Filter
Hz	Hertz
IC	Integrated Circuit
IR	Infrared
INT	Interrupter
I/O	Input/Output
IRE	Institute of Radio Engineers
LCD	Liquid Crystal Display
LED	Light Emitting Diode
LM	Loading Motor
LP	Long Play
LPF	Low Pass Filter
MAX	Maximum
M/F	Manual Focus
MIC	Microphone
MIN	Minimum
MIX	Mixer

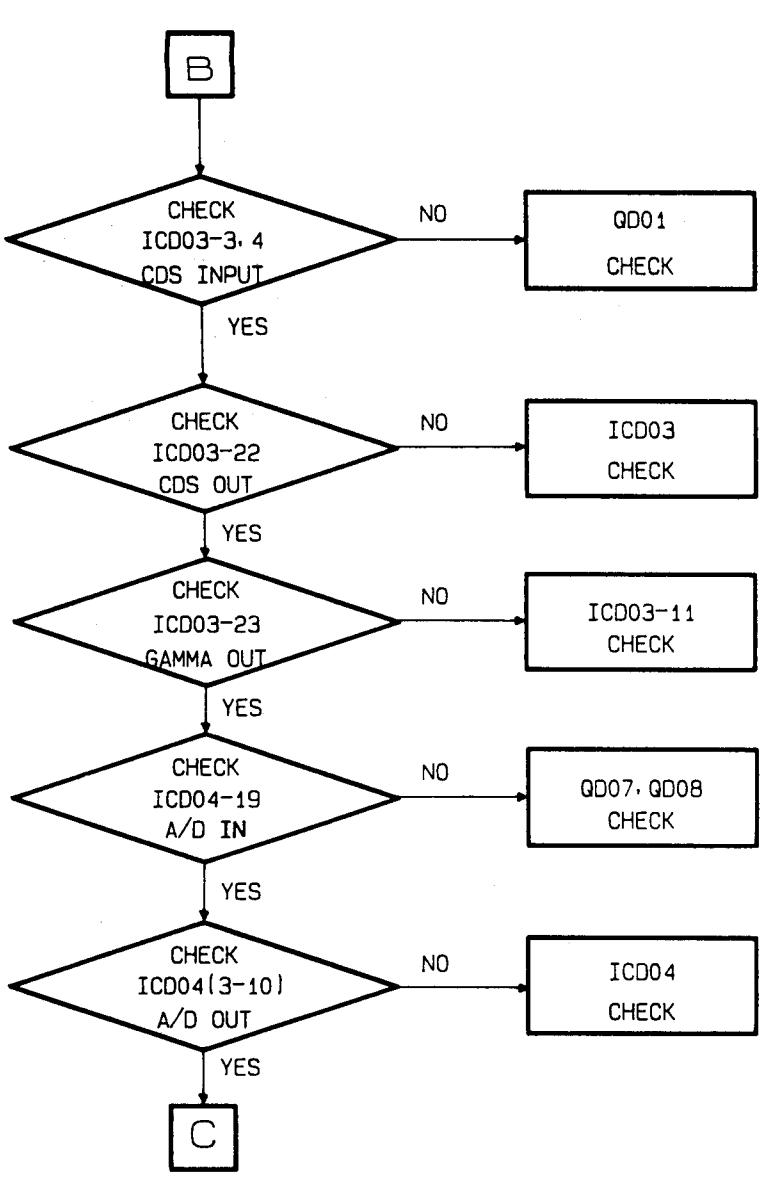
ABBREVIATION	EXPLANATION
MODED	Modulator-Demodulator
MTX	Matrix
NC	Not Connected
NR	Noise Reduction
NOR	Normal
OFD	Overflow Drain
OP AMP	Operational Amplifier
OSC	Oscillator
PB	Play Back
PCM	Pulse Coded Modulation
PG	Pulse Generator
PLA	Programmable Logic Array
PLL	Phase Locked Loop
P-P	Peak to Peak
PRE-AMP	Pre-Amplifier
P/S	Pause/Still
PWM	Pulse Width Modulation
PWR	Power
RAM	Random Access Memory
REC	Recording
REF	Reference
REG	Regulator
REV	Reverse
REW	Rewind
RF	Radio Frequency
RG	Reset Gate
ROM	Read Only Memory
RST	Reset
RPS	Reverse Picture Search
SCK	Serial Clock
SFG	Supply FG
SHD	Sample Hold Data
SHP	Sample Hold Precharge
SHP	Sharpness
SI	Serial Data Input
SO	Serial Data Output
SP	Standard Play
SN	Signal to Noise Ratio
STB	Strobe
S/W	Switch
SYNC	Synchronization
SYSCON	System Control
TP	Test Point
TR	Transistor
TRK	Tracking
UL	Unloading
UNREG	Unregulated
u-COM	Microprocessor
VCO	Voltage Control Oscillator
VCR	Video Cassette Recorder
VR	Variable Resistor
V-SYNC	Vertical-sync.
VXO	Variable Crystal Oscillator
W/B	White Blance
X-TAL	Crystal
Y/C	Luminance/Chrominance
3.58MHz	Color Sub Carrier

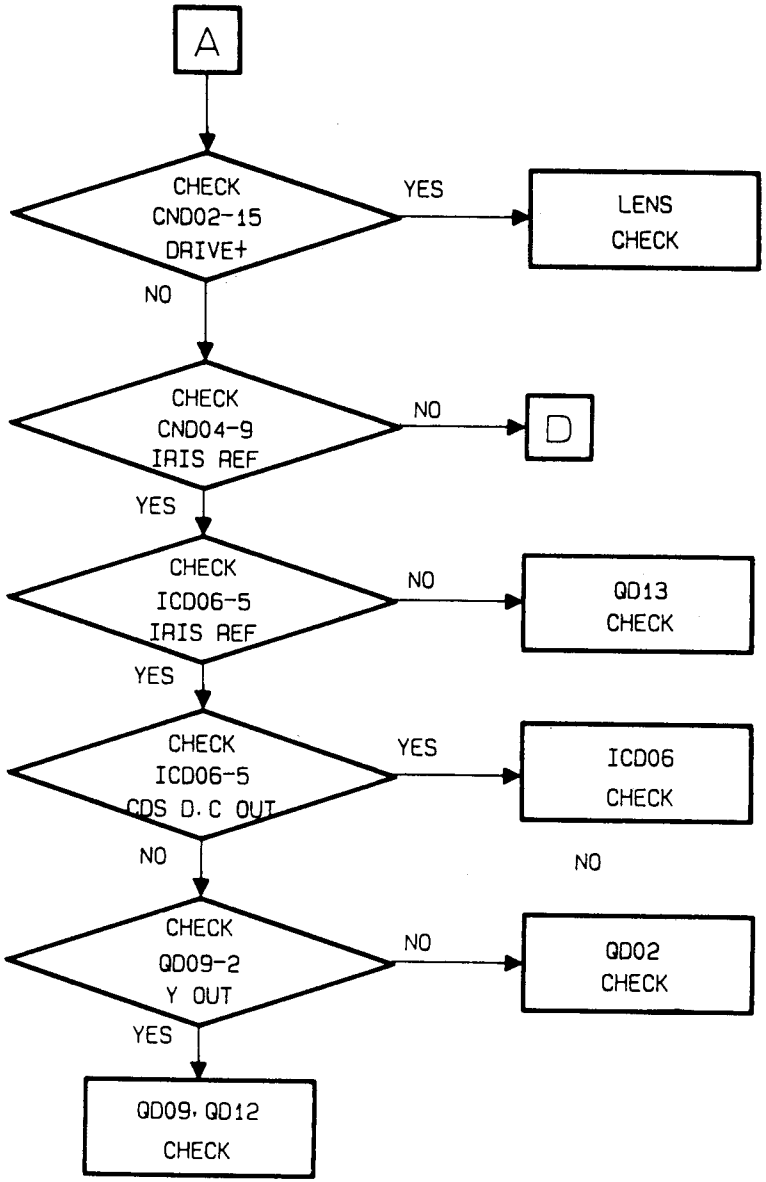
6. TROUBLESHOOTING

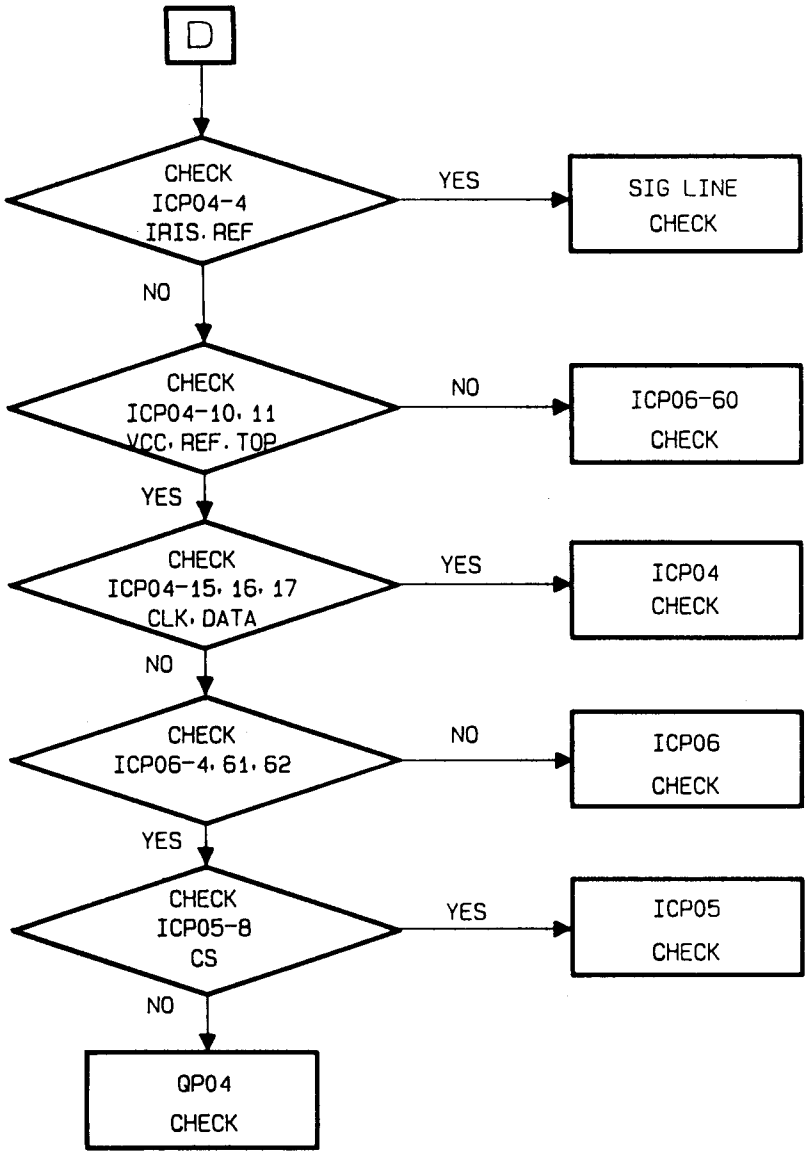
6-1. CAMERA SECTION

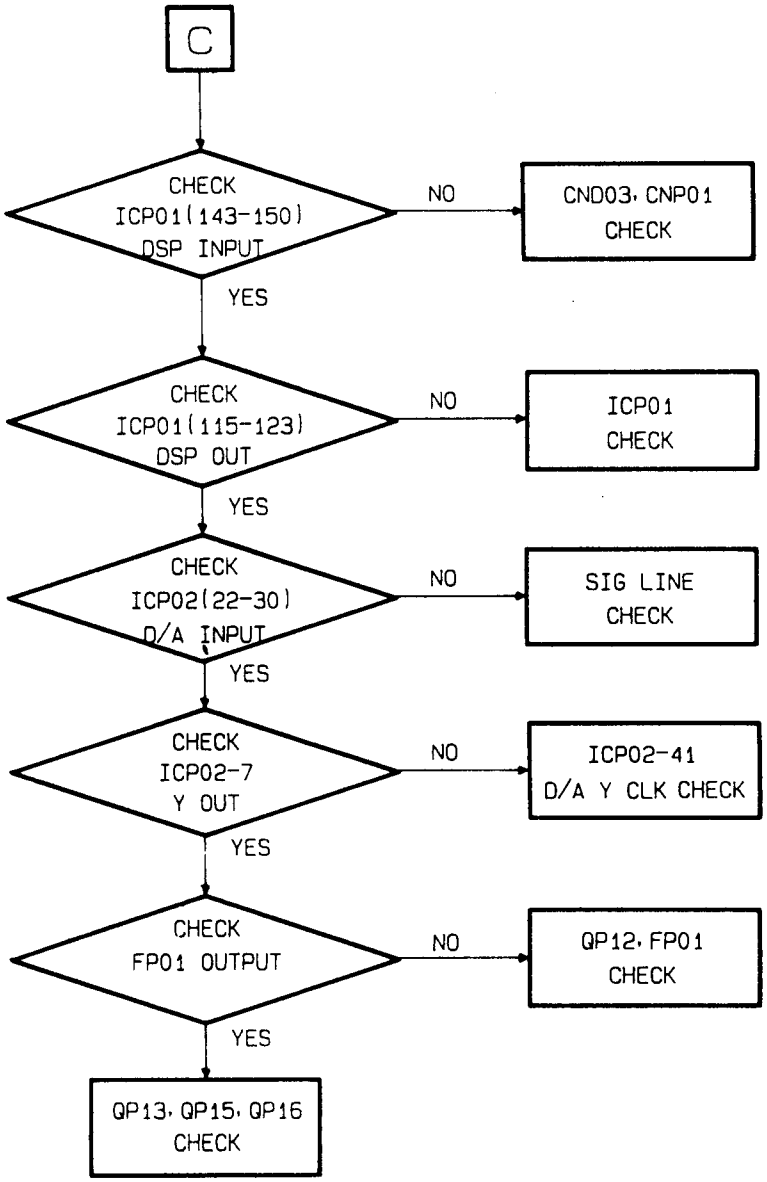


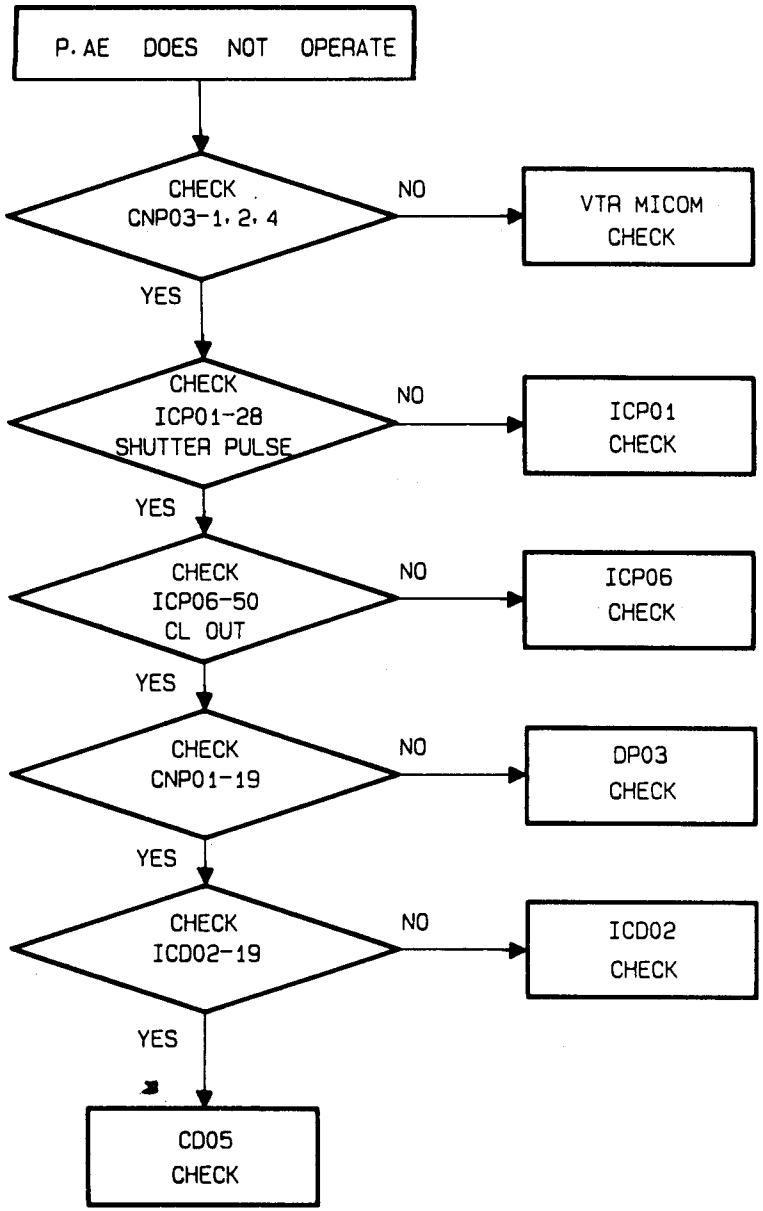


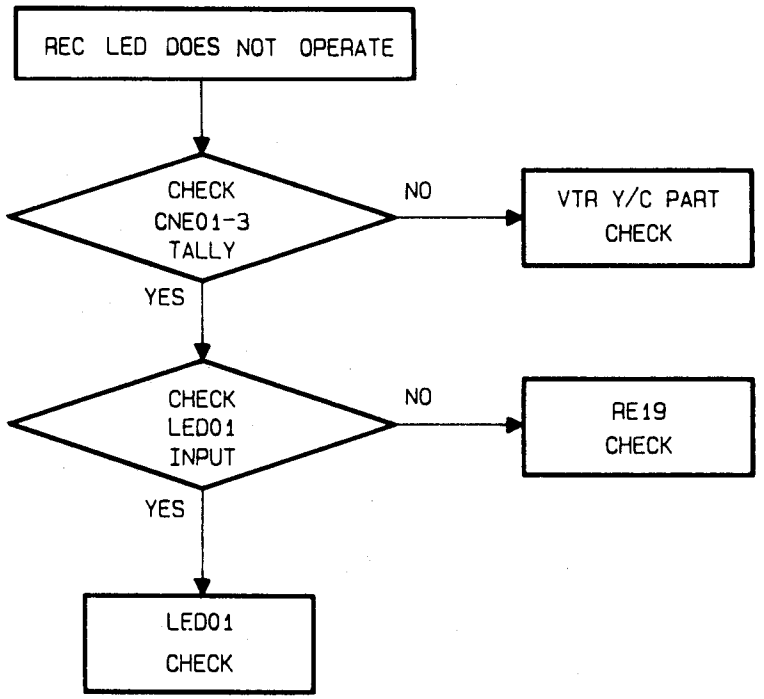

B
CHECK ICD03-3, 4 CDS INPUT
NO
QD01 CHECK
YES
CHECK ICD03-22 CDS OUT
NO
ICD03 CHECK
YES
CHECK ICD03-23 GAMMA OUT
NO
ICD03-11 CHECK
YES
CHECK ICD04-19 A/D IN
NO
QD07, QD08 CHECK
YES
CHECK ICD04(3-10) A/D OUT
NO
ICD04 CHECK
YES
C


A
CHECK CND02-15 DRIVE+
YES
LENS CHECK
NO
CHECK CND04-9 IRIS REF
NO
D
YES
CHECK ICD06-5 IRIS REF
NO
QD13 CHECK
YES
CHECK ICD06-5 CDS D.C OUT
YES
ICD06 CHECK
NO
NO
CHECK QD09-2 Y OUT
NO
QD02 CHECK
YES
QD09, QD12 CHECK

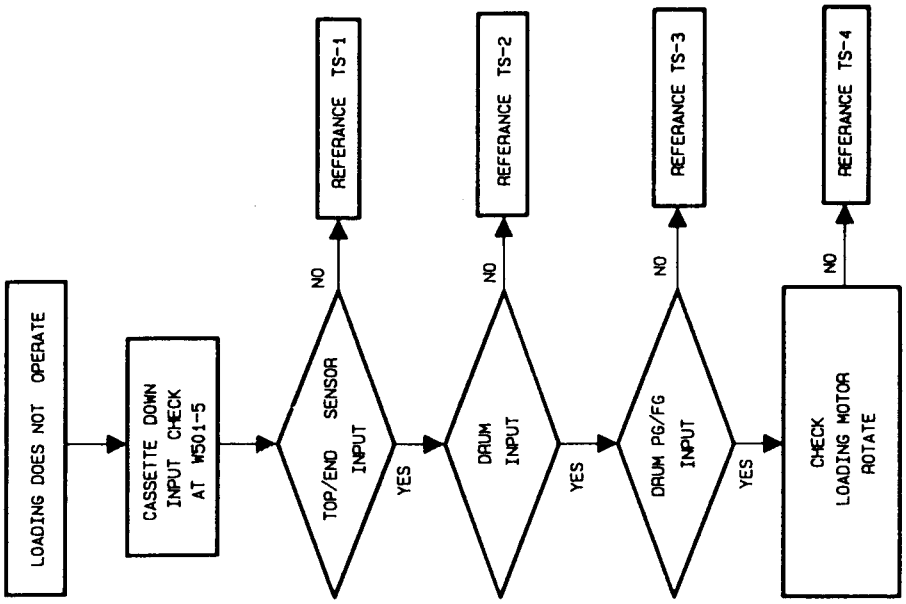

D
CHECK ICP04-4 IRIS. REF
YES
SIG LINE CHECK
NO
CHECK ICP04-10, 11 VCC, REF, TOP
NO
ICP06-60 CHECK
YES
CHECK ICP04-15, 16, 17 CLK, DATA
YES
ICP04 CHECK
NO
CHECK ICP06-4, 61, 62
NO
ICP06 CHECK
YES
CHECK ICP05-8 CS
YES
ICP05 CHECK
NO
QP04 CHECK

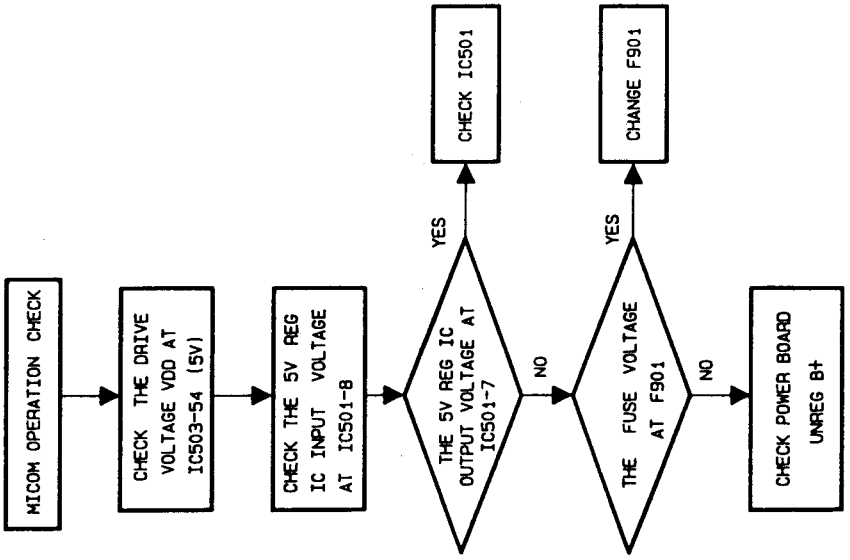

C
CHECK ICP01(143-150) DSP INPUT
NO
CND03, CNP01 CHECK
YES
CHECK ICP01(115-123) DSP OUT
NO
ICP01 CHECK
YES
CHECK ICP02(22-30) D/A INPUT
NO
SIG LINE CHECK
YES
CHECK ICP02-7 Y OUT
NO
ICP02-41 D/A Y CLK CHECK
YES
CHECK FP01 OUTPUT
NO
QP12, FP01 CHECK
YES
QP13, QP15, QP16 CHECK

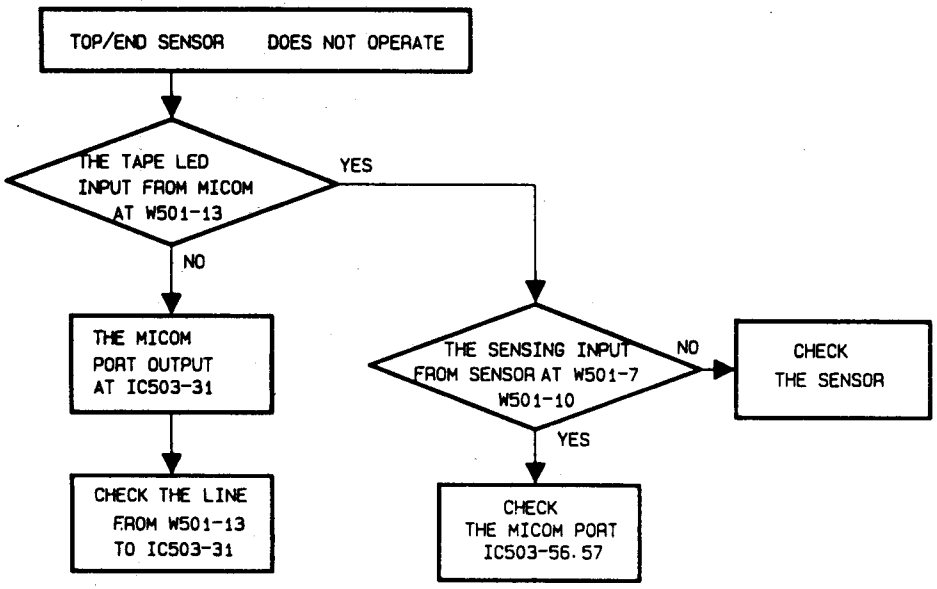

P.AE DOES NOT OPERATE
CHECK CNP03-1, 2, 4
NO
VTR MICOM CHECK
YES
CHECK ICP01-28 SHUTTER PULSE
NO
ICP01 CHECK
YES
CHECK ICP06-50 CL OUT
NO
ICP06 CHECK
YES
CHECK CNP01-19
NO
DP03 CHECK
YES
CHECK ICD02-19
NO
ICD02 CHECK
YES
CD05 CHECK

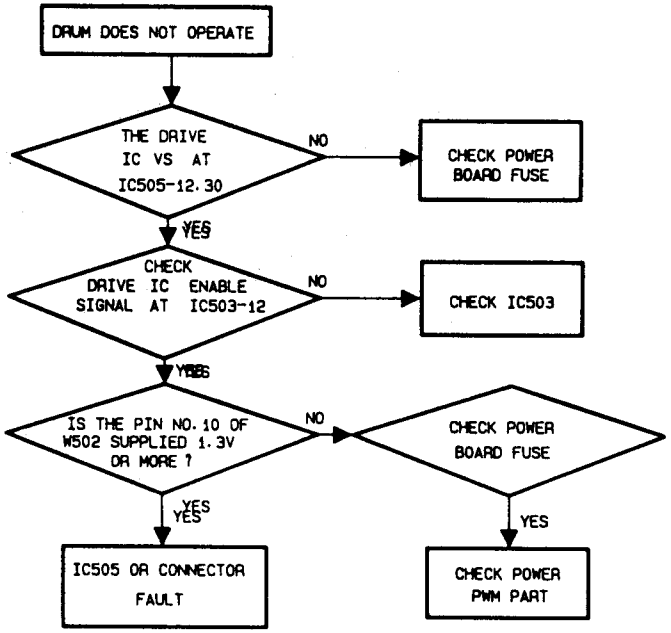

REC LED DOES NOT OPERATE
CHECK CNE01-3 TALLY
NO
VTR Y/C PART CHECK
YES
CHECK LED01 INPUT
NO
RE19 CHECK
YES
LED01 CHECK

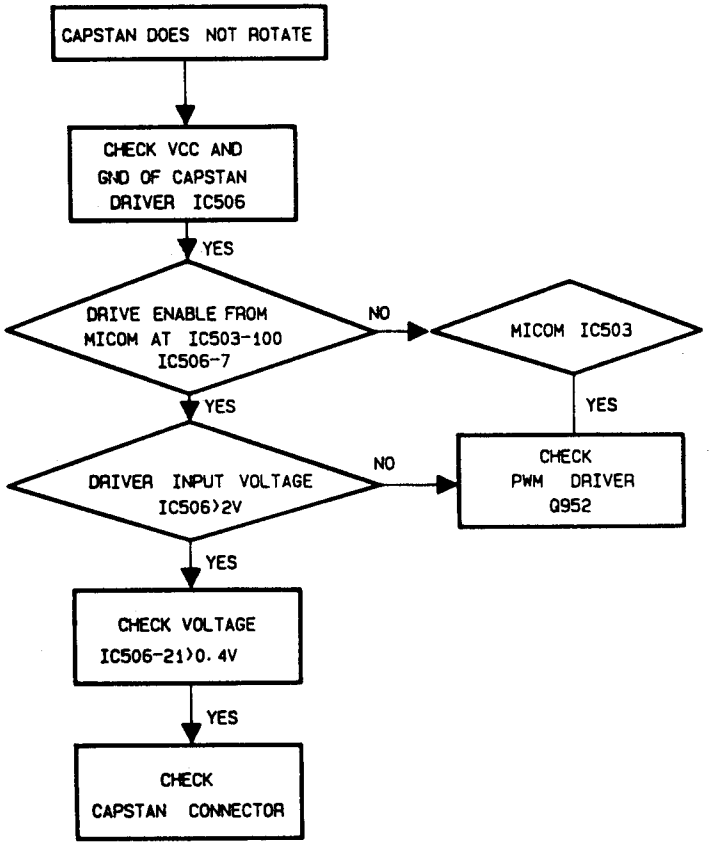
6-2. VCR SECTION

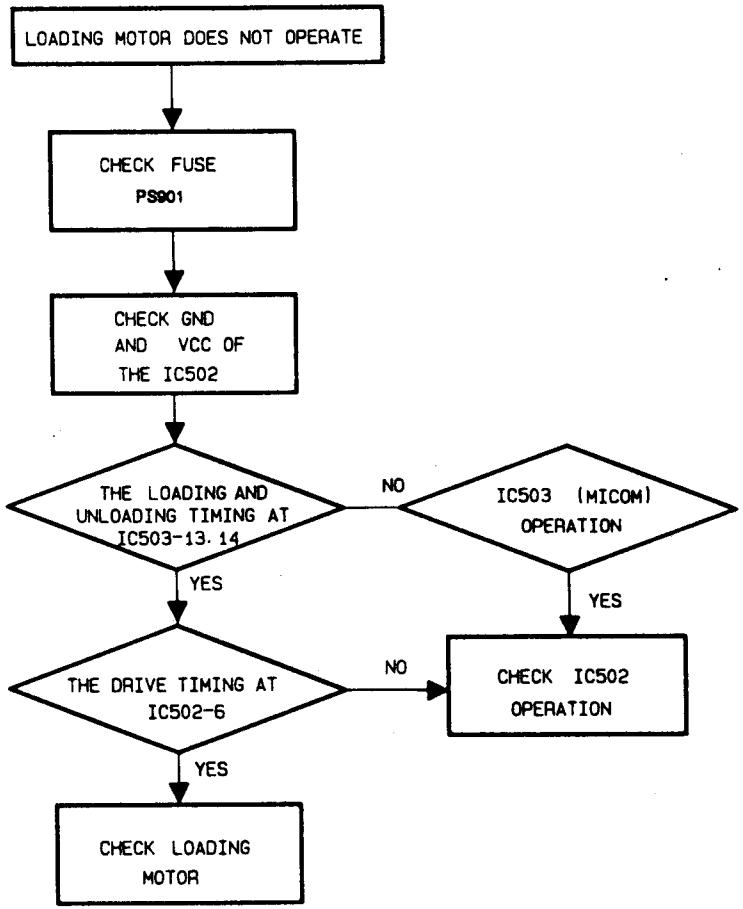


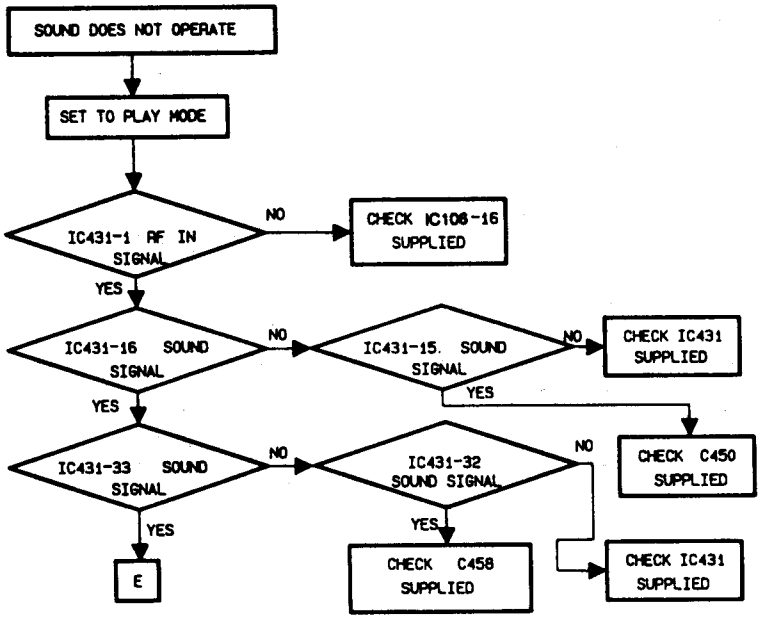


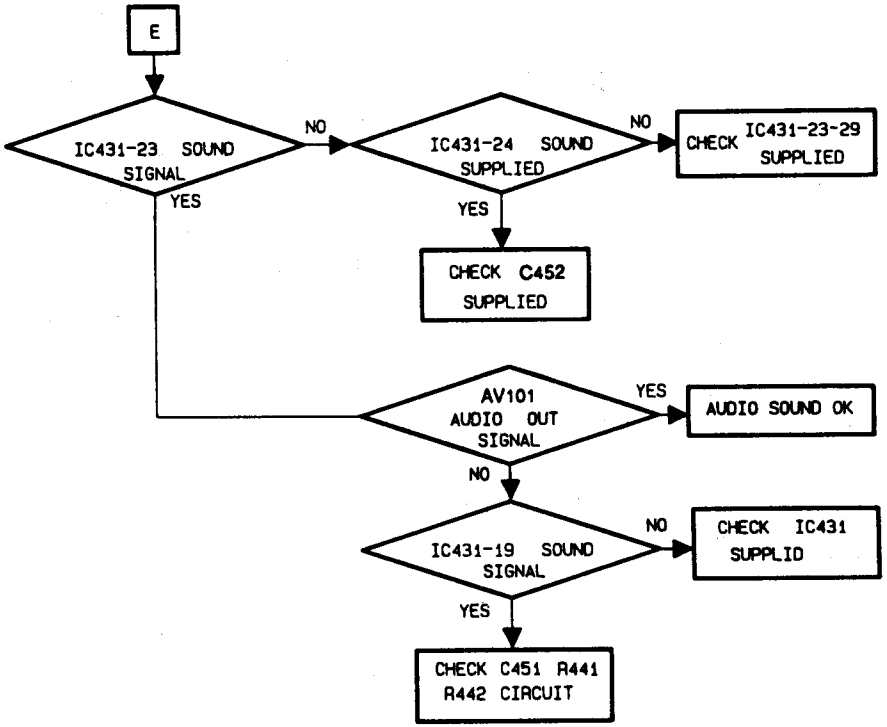

TOP/END SENSOR DOES NOT OPERATE
THE TAPE LED INPUT FROM MICOM AT W501-13
YES
NO
THE MICOM PORT OUTPUT AT IC503-31
CHECK THE LINE FROM W501-13 TO IC503-31
THE SENSING INPUT FROM SENSOR AT W501-7 W501-10
NO
CHECK THE SENSOR
YES
CHECK THE MICOM PORT IC503-56.57

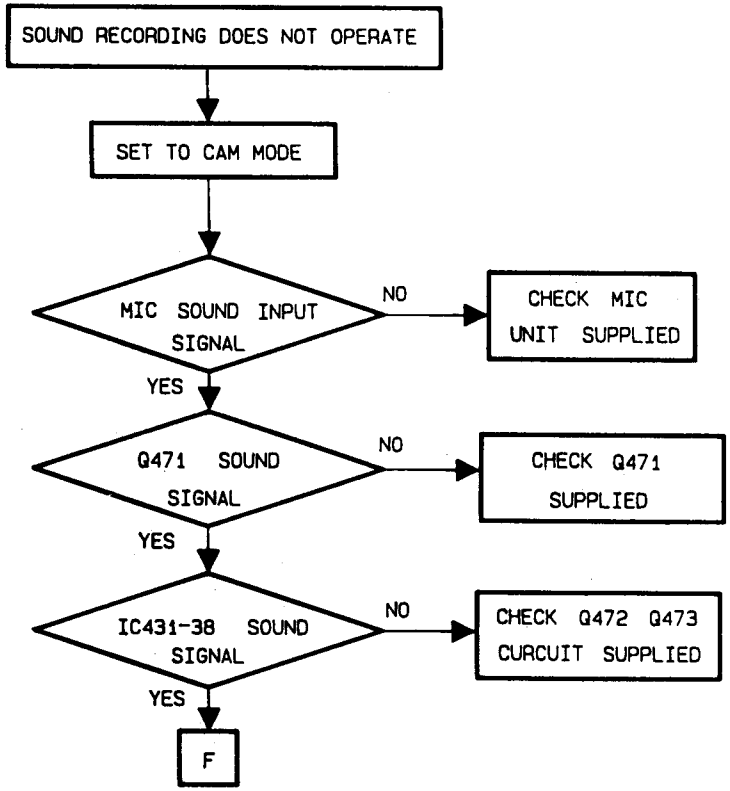

DRUM DOES NOT OPERATE
THE DRIVE IC VS AT IC505-12.30
NO
CHECK POWER BOARD FUSE
YES
CHECK DRIVE IC ENABLE SIGNAL AT IC503-12
NO
CHECK IC503
YES
IS THE PIN NO.10 OF W502 SUPPLIED 1.3V OR MORE ?
NO
CHECK POWER BOARD FUSE
YES
YES
IC505 OR CONNECTOR FAULT
CHECK POWER PWM PART

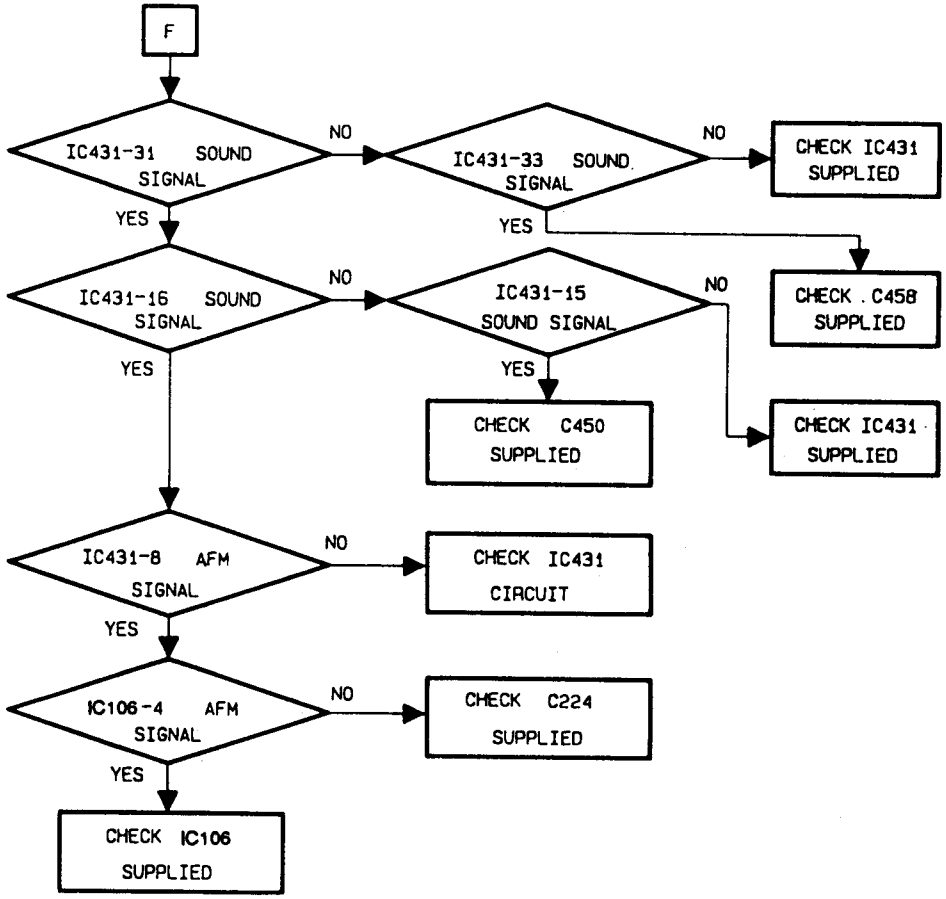

CAPSTAN DOES NOT ROTATE
CHECK VCC AND GND OF CAPSTAN DRIVER IC506
YES
DRIVE ENABLE FROM MICOM AT IC503-100 IC506-7
NO
MICOM IC503
YES
YES
DRIVER INPUT VOLTAGE IC506>2V
NO
CHECK PWM DRIVER Q952
YES
CHECK VOLTAGE IC506-21>0.4V
YES
CHECK CAPSTAN CONNECTOR

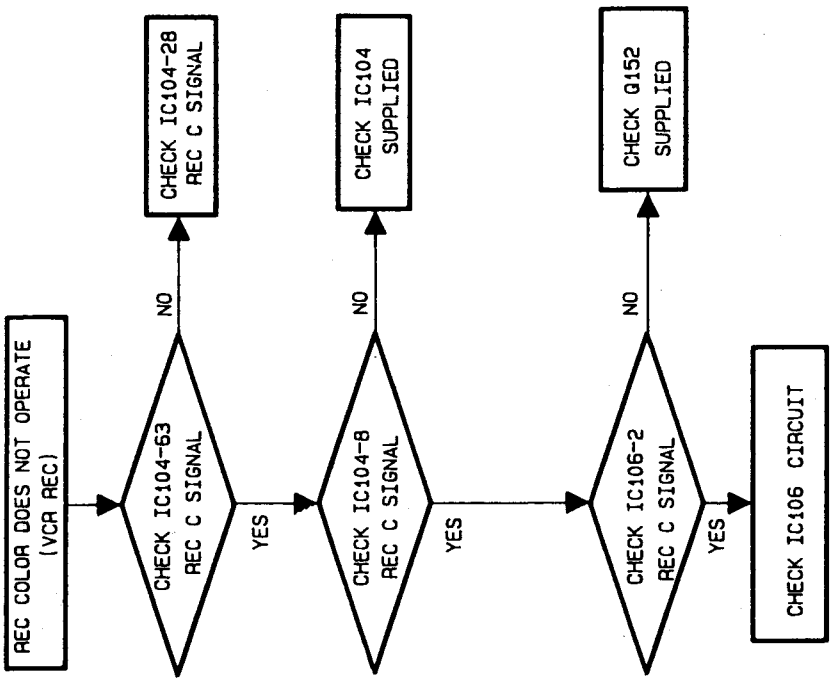

LOADING MOTOR DOES NOT OPERATE
CHECK FUSE PS901
CHECK GND AND VCC OF THE IC502
THE LOADING AND UNLOADING TIMING AT IC503-13.14
NO
IC503 (MICOM) OPERATION
YES
YES
THE DRIVE TIMING AT IC502-6
NO
CHECK IC502 OPERATION
YES
CHECK LOADING MOTOR

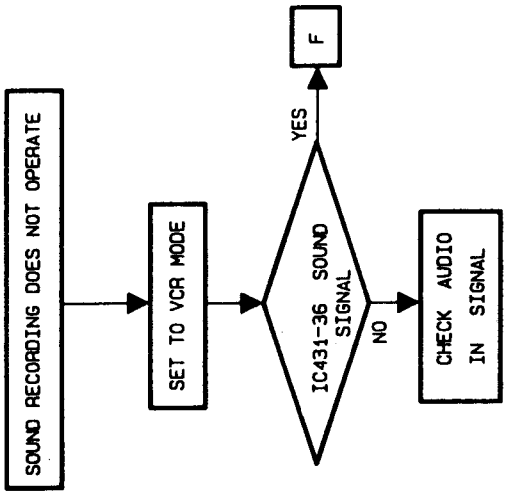

SOUND DOES NOT OPERATE
SET TO PLAY MODE
IC431-1 RF IN SIGNAL
NO
CHECK IC106-16 SUPPLIED
YES
IC431-16 SOUND SIGNAL
NO
IC431-15. SOUND SIGNAL
NO
CHECK IC431 SUPPLIED
YES
YES
IC431-33 SOUND SIGNAL
NO
IC431-32 SOUND SIGNAL
NO
CHECK C450 SUPPLIED
YES
YES
E
CHECK C458 SUPPLIED
CHECK IC431 SUPPLIED

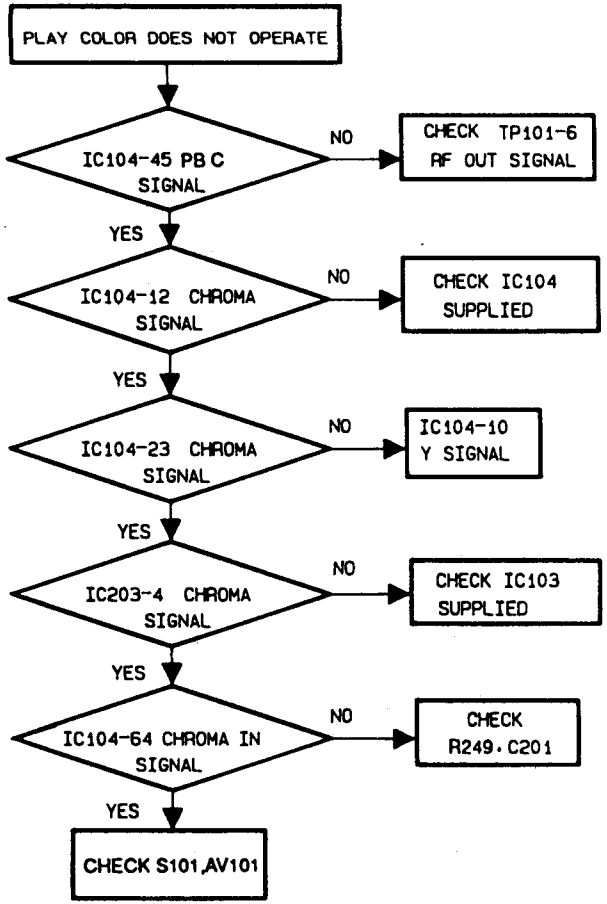

E
IC431-23 SOUND SIGNAL
NO
IC431-24 SOUND SUPPLIED
NO
CHECK IC431-23-29 SUPPLIED
YES
YES
CHECK C452 SUPPLIED
AV101 AUDIO OUT SIGNAL
YES
AUDIO SOUND OK
NO
IC431-19 SOUND SIGNAL
NO
CHECK IC431 SUPPLID
YES
CHECK C451 R441 R442 CIRCUIT

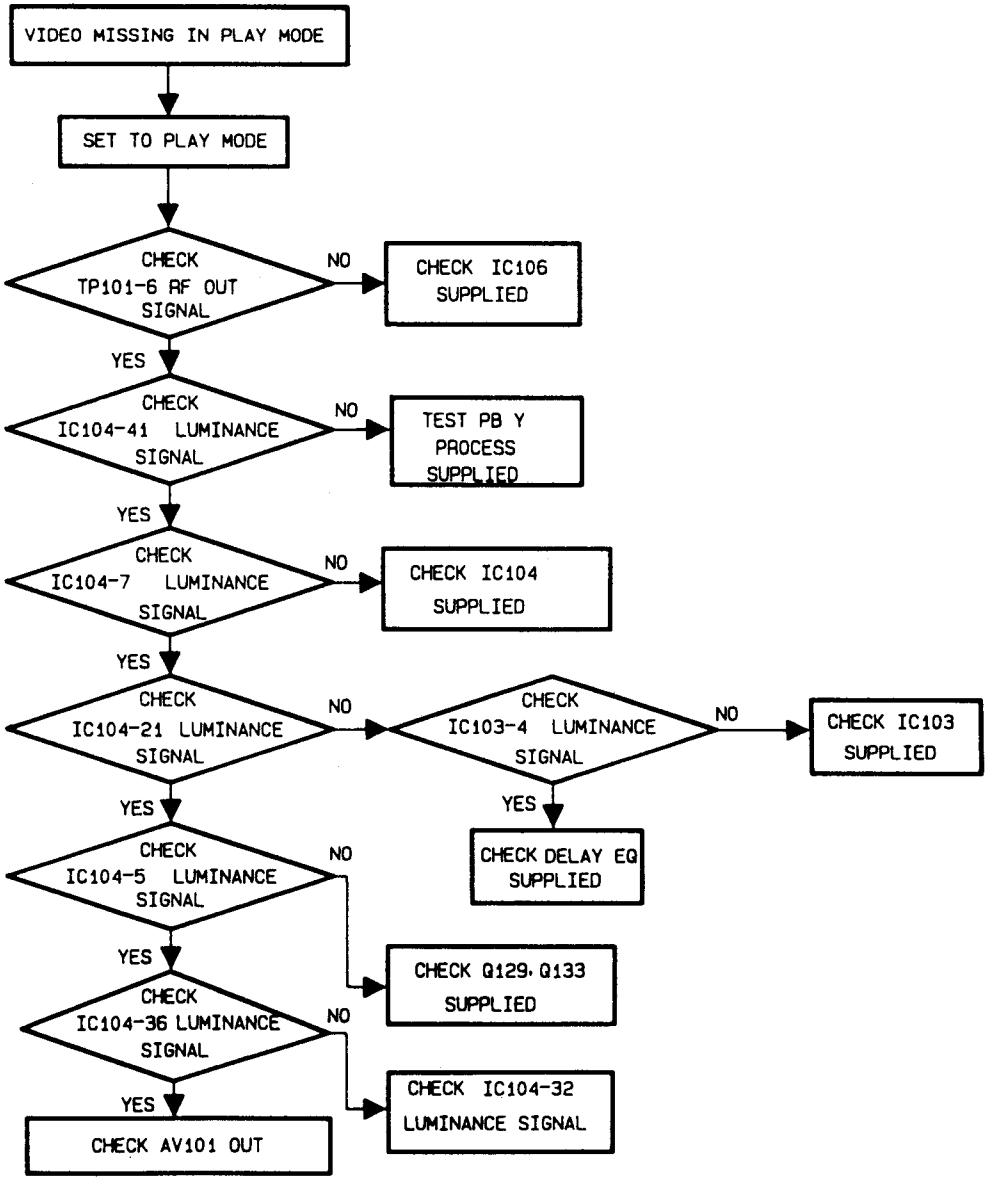

SOUND RECORDING DOES NOT OPERATE
SET TO CAM MODE
MIC SOUND INPUT SIGNAL
NO
CHECK MIC UNIT SUPPLIED
YES
Q471 SOUND SIGNAL
NO
CHECK Q471 SUPPLIED
YES
IC431-38 SOUND SIGNAL
NO
CHECK Q472 Q473 CURCUIT SUPPLIED
YES
F

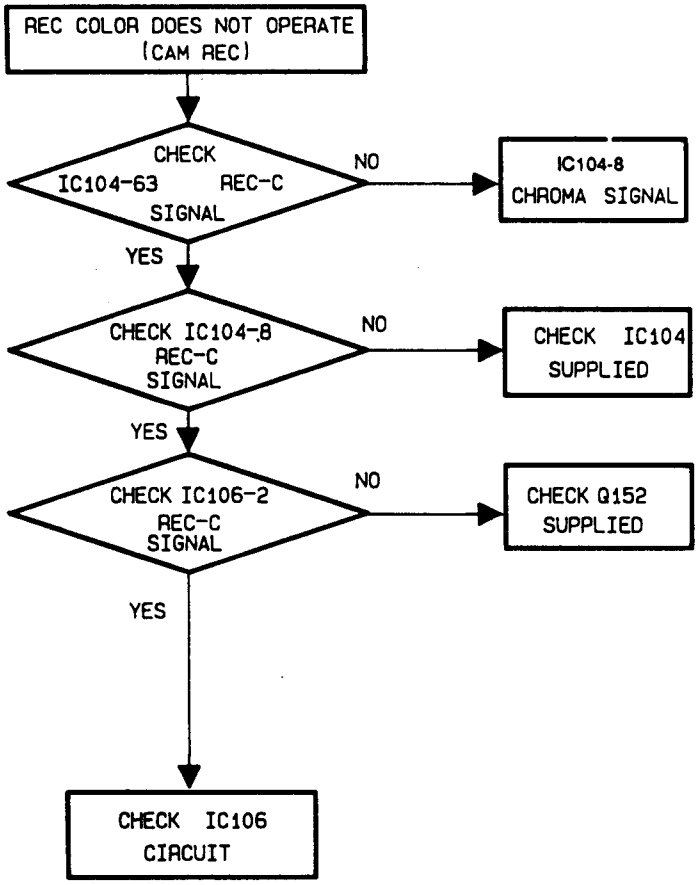

F
IC431-31 SOUND SIGNAL
NO
IC431-33 SOUND SIGNAL
NO
CHECK IC431 SUPPLIED
YES
YES
IC431-16 SOUND SIGNAL
NO
IC431-15 SOUND SIGNAL
NO
CHECK C458 SUPPLIED
YES
YES
CHECK C450 SUPPLIED
CHECK IC431 SUPPLIED
IC431-8 AFM SIGNAL
NO
CHECK IC431 CIRCUIT
YES
IC106-4 AFM SIGNAL
NO
CHECK C224 SUPPLIED
YES
CHECK IC106 SUPPLIED

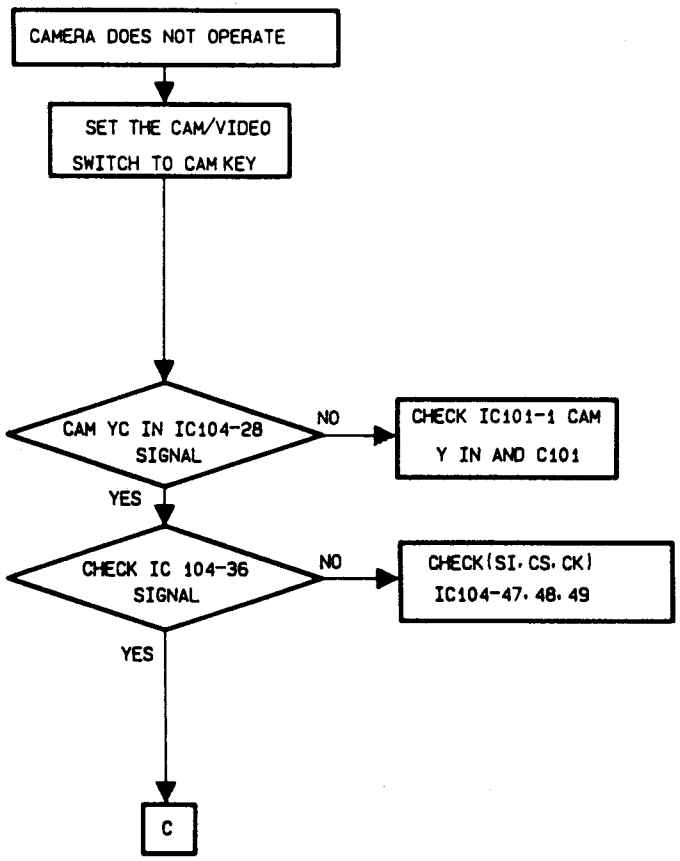

REC COLOR DOES NOT OPERATE (VCR REC)
CHECK IC104-63 REC C SIGNAL
NO
CHECK IC104-28 REC C SIGNAL
YES
CHECK IC104-8 REC C SIGNAL
NO
CHECK IC104 SUPPLIED
YES
CHECK IC106-2 REC C SIGNAL
NO
CHECK Q152 SUPPLIED
YES
CHECK IC106 CIRCUIT

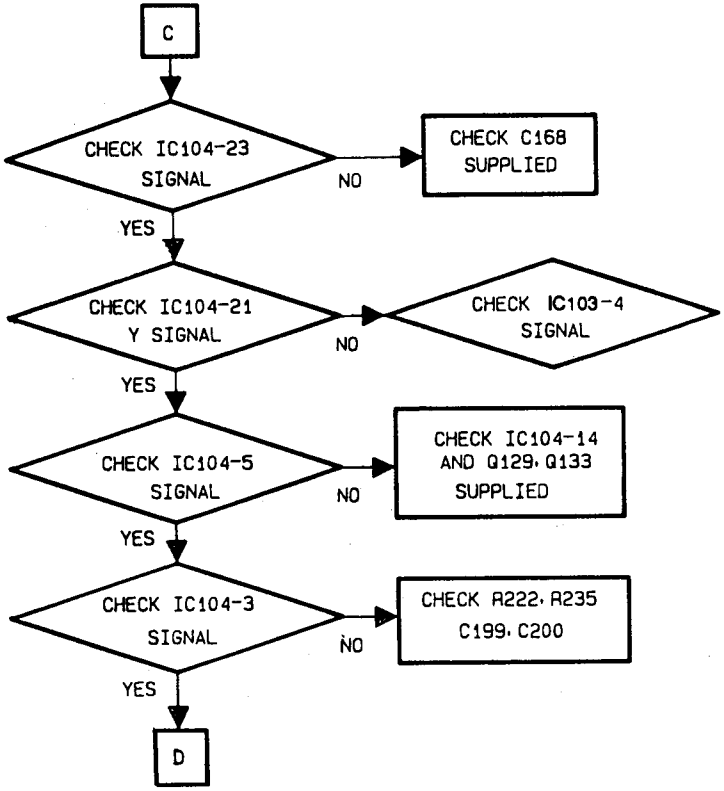

SOUND RECORDING DOES NOT OPERATE
SET TO VCR MODE
IC431-36 SOUND SIGNAL
YES
F
NO
CHECK AUDIO IN SIGNAL

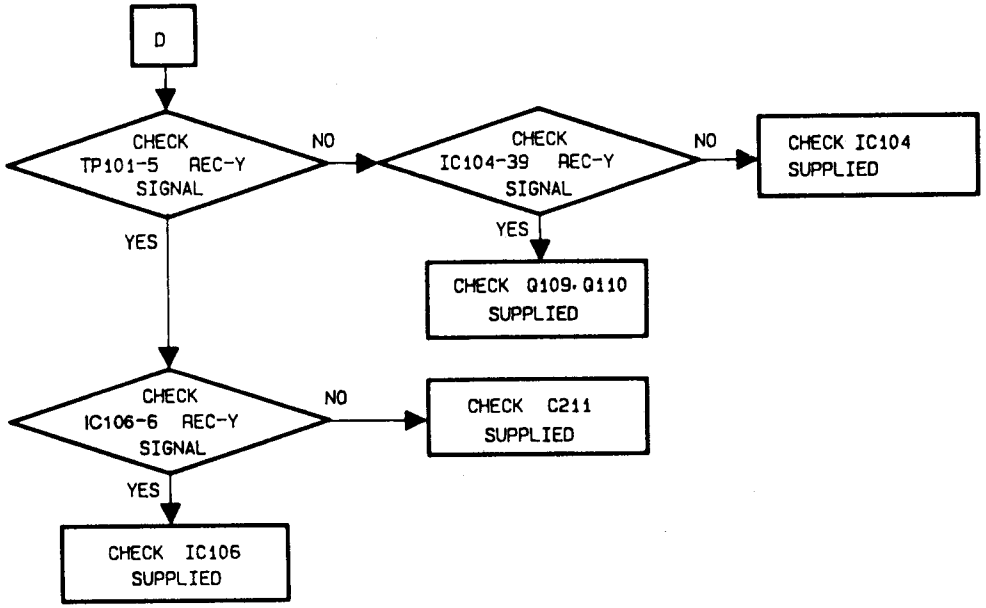

PLAY COLOR DOES NOT OPERATE
IC104-45 PB C SIGNAL
NO
CHECK TP101-6 RF OUT SIGNAL
YES
IC104-12 CHROMA SIGNAL
NO
CHECK IC104 SUPPLIED
YES
IC104-23 CHROMA SIGNAL
NO
IC104-10 Y SIGNAL
YES
IC203-4 CHROMA SIGNAL
NO
CHECK IC103 SUPPLIED
YES
IC104-64 CHROMA IN SIGNAL
NO
CHECK R249, C201
YES
CHECK S101,AV101

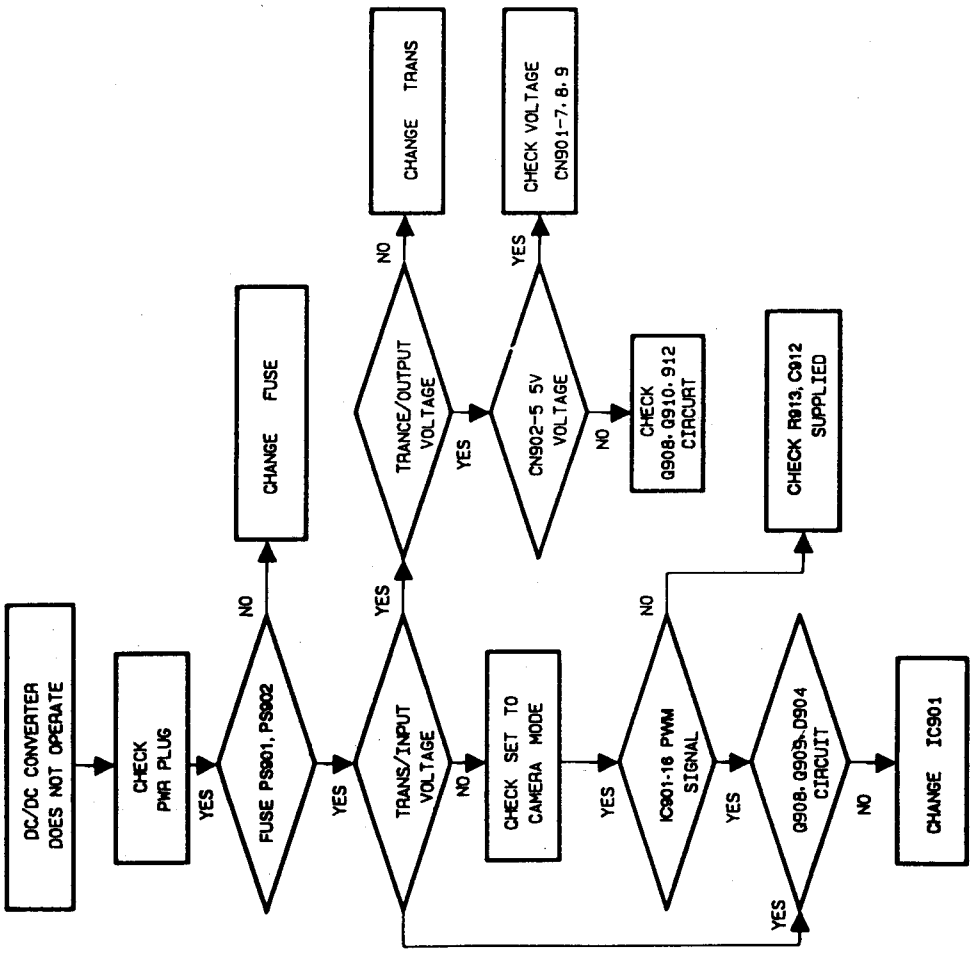

VIDEO MISSING IN PLAY MODE
SET TO PLAY MODE
CHECK TP101-6 RF OUT SIGNAL
NO
CHECK IC106 SUPPLIED
YES
CHECK IC104-41 LUMINANCE SIGNAL
NO
TEST PB Y PROCESS SUPPLIED
YES
CHECK IC104-7 LUMINANCE SIGNAL
NO
CHECK IC104 SUPPLIED
YES
CHECK IC104-21 LUMINANCE SIGNAL
NO
CHECK IC103-4 LUMINANCE SIGNAL
NO
CHECK IC103 SUPPLIED
YES
CHECK DELAY EQ SUPPLIED
YES
CHECK IC104-5 LUMINANCE SIGNAL
NO
CHECK Q129, Q133 SUPPLIED
YES
CHECK IC104-36 LUMINANCE SIGNAL
NO
CHECK IC104-32 LUMINANCE SIGNAL
YES
CHECK AV101 OUT


REC COLOR DOES NOT OPERATE
(CAM REC)
CHECK
IC104-63 REC-C
SIGNAL
NO
IC104-8
CHROMA SIGNAL
YES
CHECK IC104-8
REC-C
SIGNAL
NO
CHECK IC104
SUPPLIED
YES
CHECK IC106-2
REC-C
SIGNAL
NO
CHECK Q152
SUPPLIED
YES
CHECK IC106
CIRCUIT


CAMERA DOES NOT OPERATE
SET THE CAM/VIDEO
SWITCH TO CAM KEY
CAM YC IN IC104-28
SIGNAL
NO
CHECK IC101-1 CAM
Y IN AND C101
YES
CHECK IC 104-36
SIGNAL
NO
CHECK(SI, CS, CK)
IC104-47, 48, 49
YES
C


C
CHECK IC104-23 SIGNAL
NO
CHECK C168 SUPPLIED
YES
CHECK IC104-21 Y SIGNAL
NO
CHECK IC103-4 SIGNAL
YES
CHECK IC104-5 SIGNAL
NO
CHECK IC104-14 AND Q129, Q133 SUPPLIED
YES
CHECK IC104-3 SIGNAL
NO
CHECK R222, R235 C199, C200
YES
D


D
CHECK TP101-5 REC-Y SIGNAL
NO
CHECK IC104-39 REC-Y SIGNAL
NO
CHECK IC104 SUPPLIED
YES
CHECK Q109, Q110 SUPPLIED
YES
CHECK IC106-6 REC-Y SIGNAL
NO
CHECK C211 SUPPLIED
YES
CHECK IC106 SUPPLIED


DC/DC CONVERTER DOES NOT OPERATE
CHECK PWR PLUG
YES
FUSE PS901, PS902
NO
CHANGE FUSE
YES
TRANS/INPUT VOLTAGE
NO
CHECK SET TO CAMERA MODE
YES
IC901-16 PWM SIGNAL
NO
CHECK R913, C912 SUPPLIED
YES
Q908, Q909, D904 CIRCUIT
NO
CHANGE IC901
YES
TRANCE/OUTPUT VOLTAGE
NO
CHANGE TRANS
YES
CN902-5 5V VOLTAGE
NO
CHECK Q908, Q910, 912 CIRCURT
YES
CHECK VOLTAGE CN901-7, 8, 9

7. CHIP REPLACEMENT

7-1. PRECAUTION FOR THE CHIP REPLACEMENT

1. Do not touch the part body directly with the soldering iron.
   ICs, especially TSOP, are easily damaged by heat.
2. Use care regarding soldering iron tip and avoid rapidly heating parts. Some parts can be damaged by sudden heating. Preheat the part at about 100℃ for several minutes before installing it.
3. Use soldering tip temperature of about 240℃ or larger parts, use a slightly higher temperature (about 280℃).
4. The thin (0.3mm) solder for miniature patrs does no contain adequate flux. Supplementary flux is thus needed in most cases.

☞ **A/V systems are manufactured using flux which can be cleaned by water in the factory. When you replace the part or troubleshooting, use proper flux and solder which can be cleaned by water. Soldering area will corrode, if proper flux and solder are not used in replace. And it may cause a fatal error to the system.**

5. Use care not to damage the circuit pattern, especially when removing.
6. Because of the many pins, cleanliness of the pattern is extremely important after removing the IC.
7. Use care to avoid solder bridges. Remove any that occurs.
8. Position the part carefully. This will also affect the soldering operation. Be very precise in positioning the IC. Soldering opposite pins first holds the IC in place and makes soldering the other pins easier.
9. Do not reuse removed parts.
10. Check for solder joints, especially miniature parts with small lead.
11. A defective trimming resistor cannot be adjusted externally Replace with an ordinary variable resistor.
12. It is important to inspect the work with a magnifier. Check after installing (cold solder joints, etc).

7-2. TOOLS FOR THE CHIP REPLACEMENT

The tools for the chip replacement are as follows.

1. Thin tip type soldering iron
2. Small flat-blade tip type soldering iron
3. Special desoldering tip iron
4. Airblower unit
5. Flat Package Pick-up
6. Flux can be cleaned by water
7. 0.3mm thin solder can be cleaned by water
8. Desoldering wire
9. Tweezers

7-3. CHIP RESISTORS AND CHIP CAPACITORS

7-3-1. Type of Parts

The type of chip resistors and chip capacitors are as follows.

1. Thick Film Chip Resistors
2. Carbon Film Chip Resistors
3. Metal Film Chip Resistors
4. Chip Ceramic Capacitors
5. Chip Trimming Resistors

7-3-2. Removing the Part

Using two soldering irons ;

1. Use thin tip soldering irons.
2. Use soldering tip temperature of about 280℃.
3. Simultaneously heat both ends of the part.
4. While heating, grasp the part with the tips of the soldering irons and remove it.
5. Use desoldering wire to completely remove the old solder from the part location of the board.
6. A clean pattern for installing the new part is very important.

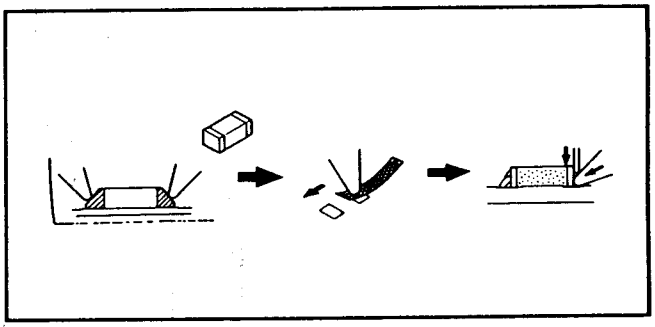


Fig. 1

7-3-3. Installing the Part

1. Clean the area where the new part is to be mounted.
2. Apply flux.
3. Set part correctly into position, prevent it from shifting.
4. Bring the soldering iron tip close to the part contact without actually touching it. Melt thin (0.3mm) solder between the tip and part so that it flows into the part contact.
5. Check work quality with a magnifier.

7-4. CHIP TANTALUM CAPACITORS AND CHIP FILTERS

7-4-1. Type of Parts

The type of chip tantalum capacitors and chip filters are as follows.

1. Chip Inductors
2. Chip Tantalum Capacitors
3. Chip Tantalum Electrolytic Capacitors
4. Chip Aluminum Electrolytic Capacitors
5. Chip Transformers
6. Chip Filters

7-4-2. Removing the Part

1. Using special desoldering iron ;

1) Select soldering tip according to part size.
2) When the solder melts, remove the part
3) Bring the tip into contact with the soldered points.
4) Remove the old solder with desoldering wire.

2. Using two soldering irons ;

1) Use small flat-blade tips.
2) Heat both ends of the part simultaneously.
3) When the solder melts, grasp and remove the part with the soldering iron tips.
4) Remove the old solder with desoldering wire.

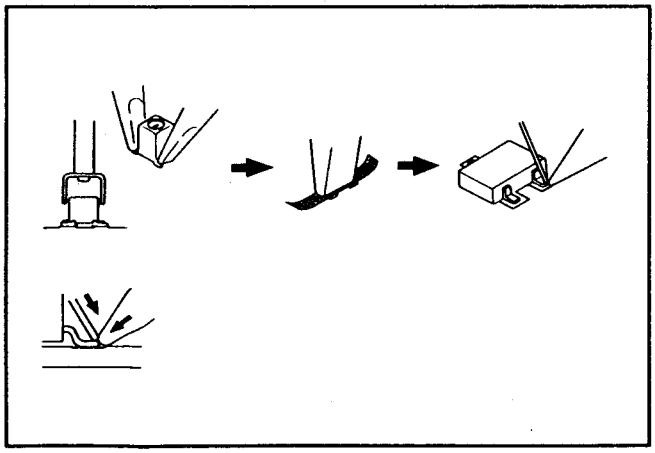


Fig. 2

7-4-3. Installing the Part

1. Clean the area where the new part is to be mounted.
2. Apply flux.
3. Set part correctly into position, prevent it from shifting.
4. Use sharp soldering iron tip. Bring close to the part contact without actually touching it. Melt thin solder between the tip and part so that it flows into the part contact.
5. Check work quality with a magnifier.

7-5. CHIP VRs, CHIP TRIMMER CAPACITORS, DIODES AND TR.

7-5-1. Type of Parts

The type of the part is as follows.

1) Chip VRs
2) Chip Trimmer Capacitors
3) Diode
4) Transistors

7-5-2. Removing the Part

Using two soldering irons ;

1. Use small flat-blade tips.
2. Heat the leads of the part simultaneously.
3. When the solder melts, grasp and remove the part with the soldering iron tips.
4. Remove the old solder with desoldering wire.

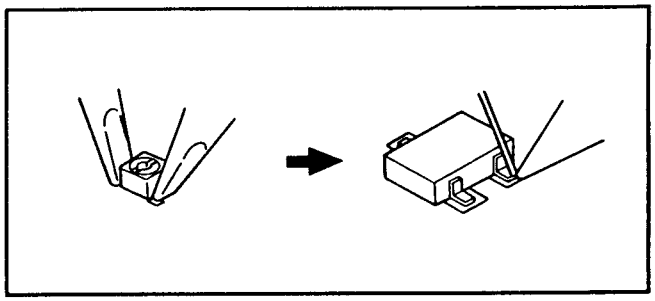


Fig. 3

7-5-3. Installing the Part

1. Clean the area where the new part is to be mounted.
2. Apply flux.
3. Set part correctly into position, prevent it from shifting.
4. Use sharp soldering iron tip. Bring close to the part contact without actually touching it. Melt thin solder between the tip and part so that it flows into the part contact.

7-6. CHIP ICs

7-6-1. Type of Chip ICs

The type of the Chip ICs are as follows ;

1. SOP(Small Outline Package) IC
2. SSOP(Shrink Small Outline Package) IC
3. VSOP(Very Small Outline Package) IC
4. QFP(Quad Flat Package) IC
5. VQFP(Very Quad Flat Package) IC
6. PLCC(Plastic Leaded Chip Carrier) IC
7. TSOP(Thin Small Outline Package) IC

7-6-2. Removing the Part

1. Using special desoldering iron ;

1)Select the tip accoding to the size and shape of the IC.
2) "Tin"the tip with a small amount of the IC leads.
3) Set the tip squarely over the IC leads.
4) When the solder melts, carefully twist the iron.
5) Raise and remove the IC.

2. Using shaped airblower unit ;

1) Select the correct nozzle.
2) Select the temperature and airblow.
(suggested : tem perature : 7, airblow : 4)
3) Engage the IC removing tool
4) Use the airblow to preheat the IC for about 5 seconds, then heat with the nozzle until the IC remover lifts the part from the board.

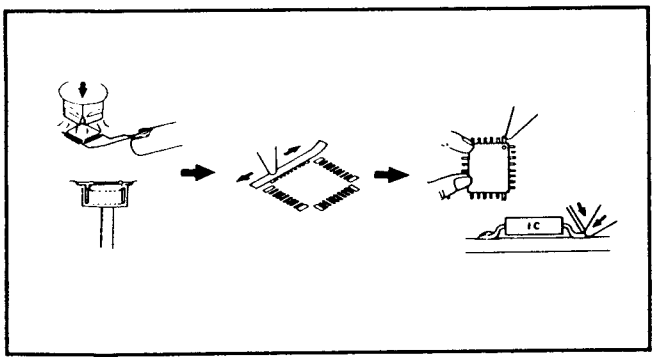


Fig. 4

7-6-3. Installing the Part

1. Use desoldering wire to remove the previous solder.
2. Clean the location.
3. Apply flux.
4. Position the IC and solder two pins at opposite sides.
5. Use a sharp tipped soldering iron and carefully solder each pin. (After gaining experience, a thicker tip can be used for better work efficiency).
6. Remove any solder bridges with desoldering wire.
7. Inspect the work with a magnifier.

7-7. HOW TO READ LEADLESS (CHIP) COMPONENT VALUE

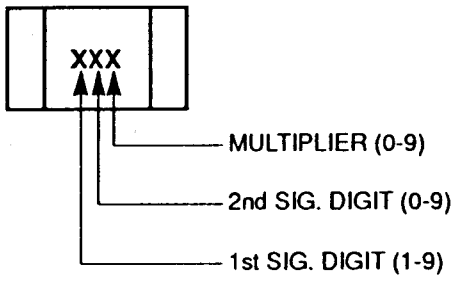
7-7-1. Check the followings before S.M.D Troubleshooting

* Cracked or Chipped Component Body
* Cracked or Separated Solder Joints
* Peeling end Terminations or Fractured Leads
* Rejection of Solder from Copper Pads or Component
* Foreign Matter on Copper Pads
* Solder Bridges

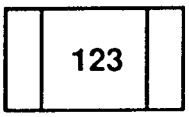
7-7-2. S.M.D (Surface Mounted Devices) Identification

1. Chip Resistor Identification

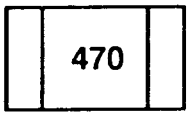
1) Standard Chip Resistor Code



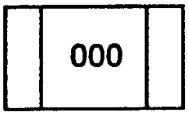
Examples



= 12 x 103 (1000) = 12000 Ω
= 12KΩ



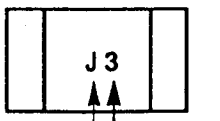
= 47 x 100 (1) = 47 Ω



= CHIP JUMPER = 0 Ω

2. Chip Capacitor Indentification

1) Standard Two Place Code



= 2.2 x 103 (1000)
= 2200 pF

MULTIPLIER (0-9)

VALUE (1st & 2nd SIG. DIGITS)
- SEE TABLE 1

Examples

S2 = 4.7 x 100 = 470 pF

b0 = 3.5 x 1.0 = 3.5 pF

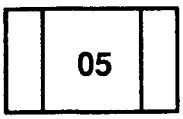
Note : Ceramic chip capacitor is no marking.

VALUE (33 VALUE SYMBOLS) - UPPER AND LOWER CASE LETTERS					MULTIPLIER
A — 1.0	H — 2.0	b — 3.5	f — 5.0	X — 7.5	0 = × 1.0
B — 1.1	J — 2.2	p — 3.6	T — 5.1	t — 8.0	1 = × 10
C — 1.2	K — 2.4	Q — 3.9	U — 5.6	Y — 8.2	2 = × 100
D — 1.3	a — 2.5	d — 4.0	m — 6.0	y — 9.0	3 = × 1000
E — 1.5	L — 2.7	R — 4.3	V — 6.2	Z — 9.1	4 = × 10000
F — 1.6	M — 3.0	e — 4.5	W — 6.8		5 = × 100000 etc.
G — 1.8	N — 3.3	S — 4.7	n — 7.0		

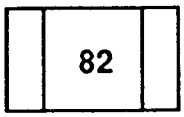
--- TABLE 1 ---

2) Alternate Two Place Code

- Values below 100 pF - Value Read Directly

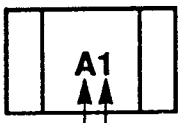


= 5 pF



= 82 pF

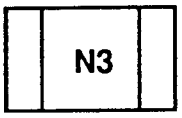
- Values 100 pF and above - Letter / Number Code



= 10 x 10
= 100 pF

MULTIPLIER (1-9)

VALUE (1st & 2nd SIG. DIGITS)
- SEE TABLE 2

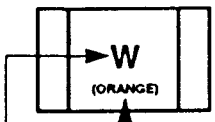


= 33 x 1000
= 33000 pF
= 0.33 uF

VALUE (24 VALUE SYMBOLS) - UPPER CASE LETTERS ONLY					MULTIPLIER
A — 10	F — 16	L — 27	R — 43	W — 68	1 = x 10
B — 11	G — 18	M — 30	S — 47	X — 75	2 = x 100
C — 12	H — 20	N — 33	T — 51	Y — 82	3 = x 1000
D — 13	J — 22	P — 36	U — 56	Z — 91	4 = x 10000
E — 15	K — 24	Q — 39	V — 62		5 = x 100000 etc.

--- TABLE 2 ---

3) Standard Single Place Code



= 4.7 x 1.0=4.7 pF

COLOR-MULTIPLIER

SYMBOL-VALUE
- SEE TABLE 3

Examples

R (Green) = 3.3 x 100 = 330 pF

7 (Blue) = 8.2 x 1000 = 8200 pF

VALUE (24 VALUE SYMBOLS) - UPPER CASE LETTERS & NUMERALS					MULTIPLIER
A — 1.0	H — 1.6	N — 2.7	V — 4.3	3 — 6.8	ORANGE = x 1.0
B — 1.1	I — 1.8	O — 3.0	W — 4.7	4 — 7.5	BLACK = x 10
C — 1.2	J — 2.0	R — 3.3	X — 5.1	7 — 8.2	GREEN = x 100
D — 1.3	K — 2.2	S — 3.6	Y — 5.6	9 — 9.1	BLUE = x 1000
E — 1.5	L — 2.4	T — 3.9	Z — 6.2		VIOLET = x 10000
					RED = x 100000

--- TABLE 3 ---

8. ELECTRICAL REPLACEMENT PARTS LIST

Loca.No	Part No	Description & Specification	Remark
159	69063-214-186	ASSY DC/DC BOARD;S8C-PAL VP-U12 VTR(DC/DC)	
C905	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C906	61454-154-682	C-CERAMIC CHIP;C1608 B1H 682KT	
C907	61454-157-473	C-CERAMIC CHIP;C1608 JF1C 473ZT	
C908	61454-154-472	C-CERAMIC CHIP;C1608 JB1H 472KT	
C909	61454-154-472	C-CERAMIC CHIP;C1608 JB1H 472KT	
C910	61454-158-473	C-CERAMIC CHIP;C1608 JB1C 473KT	
C911	61454-155-223	C-CERAMIC CHIP;C1608 JB1C 223KT	
C912	61454-153-221	C-CERAMIC CHIP;C1608 CH1H221JT	
C913	61454-154-222	C-CERAMIC CHIP;1608 B1H 222KT	
C914	61454-153-221	C-CERAMIC CHIP;C1608 CH1H221JT	
C915	61454-154-102	C-CERAMIC CHIP;C1608 B1H 102KT	
C917	B1100-0674	C-CERAMIC,CHIP;CK 73 Y5V 16V T 685-Z C3225	
C918	61454-244-471	C-ELEC.CHIP;ECE-V1CA470P	
C919	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C920	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C921	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C922	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C923	A1100-0675	C-CERAMIC,CHIP;CK 73 Y5V 16V T 225-Z C2012	
C924	61454-153-220	C-CERAMIC CHIP;C1608 CH1H220JT	
C925	B1100-0674	C-CERAMIC,CHIP;CK 73 Y5V 16V T 685-Z C3225	
C926	B1100-0752	C-CERAMIC,CHIP;CK 73 Y5V 25V T 105-Z C3216 C3216Y5	
C927	B1100-0752	C-CERAMIC,CHIP;CK 73 Y5V 25V T 105-Z C3216 C3216Y5	
C928	B1100-0752	C-CERAMIC,CHIP;CK 73 Y5V 25V T 105-Z C3216 C3216Y5	
C929	B1100-0752	C-CERAMIC,CHIP;CK 73 Y5V 25V T 105-Z C3216 C3216Y5	
C930	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C931	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C940	B1100-0674	C-CERAMIC,CHIP;CK 73 Y5V 16V T 685-Z C3225	
C941	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C950	61454-244-471	C-ELEC.CHIP;ECE-V1CA470P	
C951	A1100-0675	C-CERAMIC,CHIP;CK 73 Y5V 16V T 225-Z C2012	
C952	61454-247-105	C-ELECTROLYTIC;OS COND 10SC 10M.K	
C953	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C954	61454-244-471	C-ELEC.CHIP;ECE-V1CA470P	
C955	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C956	61454-153-121	C-CERAMIC CHIP;C1608 CH1H121JT	
C957	61454-244-471	C-ELEC.CHIP;ECE-V1CA470P	
C958	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C959	61454-154-682	C-CERAMIC CHIP;C1608 B1H 682KT	
C960	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C961	61454-154-102	C-CERAMIC CHIP;C1608 B1H 102KT	
C962	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C963	61454-153-121	C-CERAMIC CHIP;C1608 CH1H121JT	
C964	61454-154-682	C-CERAMIC CHIP;C1608 B1H 682KT	
C965	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C966	61454-154-102	C-CERAMIC CHIP;C1608 B1H 102KT	
C967	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
CN901	B6010-0777	CONNECTOR-WAFER;53263-1691 WHT	
CN902	B6010-0745	CONNECTOR-WAFER;53263-1291 WHT	
D904	62169-102-054	DIODE-SHOTTKY.CHIP;E10QS03-TE12R	
D907	62169-901-103	DIODE CHIP;IMN10(T108)	
IC901	B4008-0969	IC-S/W REGU;TL1455C 5CH DIP	
IC902	B4008-1128	IC-OP AMP;TA75S01F(TE85L) QFP	
IC903	B4008-1128	IC-OP AMP;TA75S01F(TE85L) QFP	
L907	B1144-0024	COIL-CHIP;CHOKE 646CY-470M(47UH) 47UH-M T	
L908	B1144-0022	COIL-CHIP;CHOKE 646CY-100M(10UH)P3 10UH-M T	
L909	B1144-0023	COIL-CHIP;CHOKE 646CY-220M(22UH) 22UH-M T	
L911	B1160-0011	INDUCTOR,CHIP;10UH-K 73 NLC322522T-100K C3225	
L912	B1160-0011	INDUCTOR,CHIP;10UH-K 73 NLC322522T-100K C3225	
L913	B1160-0019	INDUCTOR,CHIP;330UH-K 73 NLC322522T-331K C3225	
L914	B1160-0019	INDUCTOR,CHIP;330UH-K 73 NLC322522T-331K C3225	
L915	B1160-0019	INDUCTOR,CHIP;330UH-K 73 NLC322522T-331K C3225	
L917	B1160-0011	INDUCTOR,CHIP;10UH-K 73 NLC322522T-100K C3225	
L950	B1144-0032	COIL-CHIP;CHOKE 646CY-101M 100MH-M T 7373	

Loca No	Part No	Description & Specification	Remark
L951	B1144-0031	COIL-CHIP;CHOKE 646FY-471K 470MH-K T 7373	
L952	B1144-0031	COIL-CHIP;CHOKE 646FY-471K 470MH-K T 7373	
PS901	B3065-0167	FUSE;FSF 125V 2.0A 6.1MM UL/CSA 451002 C	
PS902	B3065-0167	FUSE;FSF 125V 2.0A 6.1MM UL/CSA 451002 C	
Q901	62129-303-012	TRANSISTOR-CHIP;DTC144EU(T106)	
Q902	62129-303-011	TRANSISTOR-CHIP;DTA144EU(T106)	
Q903	62129-303-011	TRANSISTOR-CHIP;DTA144EU(T106)	
Q907	62129-304-007	TRANSISTOR-CHIP;DTC 124EU(T106)	
Q908	A4050-0098	TR-GENERAL,CHIP;2SB1302 1.3W 5A 320MHZ 25V SI/PNP	
Q909	62129-302-022	TRANSISTOR-CHIP;2SC4081-R(T106)	
Q911	A4050-0098	TR-GENERAL,CHIP;2SB1302 1.3W 5A 320MHZ 25V SI/PNP	
Q912	62129-303-012	TRANSISTOR-CHIP;DTC144EU(T106)	
Q913	62129-302-022	TRANSISTOR-CHIP;2SC4081-R(T106)	
Q914	62129-301-120	TRANSISTOR.CHIP;2SB 1121(REEL)T-TC	
Q950	B4056-0032	TR-SWITCHING;FP101 1.3W 150MHZ SI/PNP T	
Q951	62129-302-022	TRANSISTOR-CHIP;2SC4081-R(T106)	
Q952	B4056-0032	TR-SWITCHING;FP101 1.3W 150MHZ SI/PNP T	
Q953	62129-302-022	TRANSISTOR-CHIP;2SC4081-R(T106)	
R902	61079-918-223	R-CHIP;RH C1608 CS 223-J	
R903	61079-918-472	R-CHIP;RH C1608 CS 472-J	
R904	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R905	61079-918-221	R-CHIP;RH C1608 CS 221-J	
R906	61079-918-124	R-CHIP;RH C1608 CS 124-J	
R907	61079-918-472	R-CHIP;RH C1608 CS 472-J	
R908	61079-918-273	R-CHIP;RH C1608 CS 273-J	
R909	61079-918-473	R-CHIP;RH C1608 CS 473-J	
R910	61079-918-472	R-CHIP;RH C1608 CS 472-J	
R913	61079-918-622	R-CHIP;RH C1608 CS 622-J	
R914	61079-918-472	R-CHIP;RH C1608 CS 472-J	
R915	61079-918-472	R-CHIP;RH C1608 CS 472-J	
R916	61079-918-124	R-CHIP;RH C1608 CS 124-J	
R917	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R918	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R919	61079-918-122	R-CHIP;RH C1608 CS 122-J	
R920	61079-917-121	R-CHIP;RH C2012 CS 121-J	
R921	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R922	61079-918-272	R-CHIP;RH C1608 CS 272-J	
R923	61079-918-683	R-CHIP;RH C1608 CS 683-J	
R924	61079-918-223	R-CHIP;RH C1608 CS 223-J	
R925	61079-217-221	R-CHIP;RH C3216 CS 221-J	
R926	61079-217-221	R-CHIP;RH C3216 CS 221-J	
R928	61079-917-102	R-CHIP;RH C2012 CS 102-J	
R929	61079-918-822	R-CHIP;RH C1608 CS 822-J	
R932	61079-918-333	R-CHIP;RH C1608 CS 333-J	
R933	61079-918-272	R-CHIP;RH C1608 CS 272-J	
R935	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R950	61079-918-222	R-CHIP;RH C1608 CS 222-J	
R951	61079-918-183	R-CHIP;RH C1608 CS 183-J	
R952	61079-917-391	R-CHIP;RH C2012 CS 391-J	
R953	61079-918-562	R-CHIP;RH C1608 CS 562-J	
R954	61079-918-182	R-CHIP;RH C1608 CS 182-J	
R955	61079-917-391	R-CHIP;RH C2012 CS 391-J	
R956	61079-918-222	R-CHIP;RH C1608 CS 222-J	
R957	61079-918-183	R-CHIP;RH C1608 CS 183-J	
R958	61079-918-562	R-CHIP;RH C1608 CS 562-J	
R959	61079-918-182	R-CHIP;RH C1608 CS 182-J	
R960	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R961	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R962	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R963	61079-918-682	R-CHIP;RH C1608 CS 682-J	
R964	61079-918-392	R-CHIP;RH C1608 CS 392-J	
R965	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R966	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R967	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R968	61079-918-682	R-CHIP;RH C1608 CS 682-J	
R969	61079-918-392	R-CHIP;RH C1608 CS 392-J	

Loca.No	Part No	Description & Specification	Remark
SW901	B3006-0057	SW-SLIDE;2C2P SH 4H SSST-0-12-B	
SW902	B3018-0025	SW-TACT,CHIP;SKQGAF 6.4X5.2MM WHT 1KEY	
SW903	B3006-0050	SW SLIDE CHIP;SSSS2-13-11	
T901	67189-0040-00	CONVERTER-COIL;CMS64 6319-JPS-010	
VR902	B1056-0044	VR-SEMI CHIP;EVM1SSX50B13 1KB CERMET	
VR903	B1056-0044	VR-SEMI CHIP;EVM1SSX50B13 1KB CERMET	
163	69063-214-187	ASSY HOT SHOE BOARD;S8C-PAL VN-U12/BASIC	
C1001	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
CN1001	B6010-0828	CONNECTOR-WAFER;53261-0990 WHT	
CN1002	B6010-0779	CONNECTOR-WAFER;53261-0490 WHT	
Q1001	62129-101-173	TRANSISTOR.CHIP;KSR 1104(REEL)	
R1001	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R1002	61079-918-000	R-CHIP;RH C1608 CS 000-J	
R1003	61079-918-102	R-CHIP;RH C1608 CS 102-J	
RM1001	B1294-0026	MODULE-REMOCON;GP1U901X 38KHZ 940 MESH	
162	69063-214-185	ASSY MAIN BOARD;S8C-PAL VP-U12 VTR(SS,VID,AUD,FUN)	
	VIDEO PARTS		
AV101	A3040-0122	JACK-RCA;PI3.3 MONO(VP-U12) 4P (A/V+DC)	
C101	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C103	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C104	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C105	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C106	61454-153-220	C-CERAMIC CHIP;C1608 CH1H220JT	
C107	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C108	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C109	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C110	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C111	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C112	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C113	61454-153-390	C-CERAMIC CHIP;C1608 CH1H390JT	
C114	61454-153-150	C-CERAMIC CHIP;C1608 CH1H150JT	
C115	61454-153-101	C-CERAMIC CHIP;C1608 CH1H101JT	
C116	61454-153-271	C-CERAMIC CHIP;C1608 CH1H271JT	
C117	61454-153-330	C-CERAMIC CHIP;C1608 CH1H330JT	
C118	61454-154-332	C-CERAMIC CHIP;C1608 B1H 332KT	
C120	61454-242-221	C-ELEC.CHIP;ECE-V0GA221P	
C121	61619-908-479	C-ELEC.CHIP;UWX1C4R7 MCR2GB PI3 4.7U/25V	
C122	61454-153-470	C-CERAMIC CHIP;C1608 CH1H470JT	
C123	61454-153-151	C-CERAMIC CHIP;C1608 CH1H151JT	
C124	61454-153-111	C-CERAMIC CHIP;C1608 CH1H111JT	
C125	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C126	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C127	61454-154-102	C-CERAMIC CHIP;C1608 B1H 102KT	
C128	A1106-0107	C-TANTALUM,CHIP;CS 35V T 224-M C3216 SCS1V 224MR-A	
C129	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C130	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C131	61454-243-471	C-ELEC.CHIP;ECE-V0JA470P	
C132	61454-153-330	C-CERAMIC CHIP;C1608 CH1H330JT	
C133	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C134	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C135	61619-908-011	C-ELEC.CHIP;UWX1C100 MCR2GB PI3 10U/16V	
C136	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C137	61619-908-011	C-ELEC.CHIP;UWX1C100 MCR2GB PI3 10U/16V	
C138	A1106-0071	C-TANTALUM.CHIP;SCN1C 105MR-A(16V/1U)	
C139	61454-155-223	C-CERAMIC CHIP;C1608 JB1C 223KT	
C140	61454-154-682	C-CERAMIC CHIP;C1608 B1H 682KT	
C141	A1106-0228	C-TANTALUM,CHIP;CS 20V T 684-M C3216 SCN1D684MR-A	
C142	61454-153-300	C-CERAMIC CHIP;C1608 CH1H300JT	
C143	61454-155-223	C-CERAMIC CHIP;C1608 JB1C 223KT	
C144	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C145	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C146	61454-154-102	C-CERAMIC CHIP;C1608 B1H 102KT	
C147	61454-153-820	C-CERAMIC CHIP;C1608 CH1H820JT	
C148	61454-153-270	C-CERAMIC CHIP;C1608 CH1H270JT	
C149	61454-153-220	C-CERAMIC CHIP;C1608 CH1H220JT	
C150	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	

Loca No	Part No	Description & Specification	Remark
C151	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C152	61454-243-471	C-ELEC.CHIP;ECE-V0JA470P	
C153	61454-154-102	C-CERAMIC CHIP;C1608 B1H 102KT	
C154	A1106-0071	C-TANTALUM.CHIP;SCN1C 105MR-A(16V/1U)	
C155	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C156	61454-153-220	C-CERAMIC CHIP;C1608 CH1H220JT	
C157	61454-153-271	C-CERAMIC CHIP;C1608 CH1H271JT	
C158	61454-155-223	C-CERAMIC CHIP;C1608 JB1C 223KT	
C159	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C160	61454-153-180	C-CERAMIC CHIP;C1608 CH1H180JT	
C161	61454-153-270	C-CERAMIC CHIP;C1608 CH1H270JT	
C162	61454-153-101	C-CERAMIC CHIP;C1608 CH1H101JT	
C164	61454-153-220	C-CERAMIC CHIP;C1608 CH1H220JT	
C165	61454-153-101	C-CERAMIC CHIP;C1608 CH1H101JT	
C166	61454-153-470	C-CERAMIC CHIP;C1608 CH1H470JT	
C167	61454-153-470	C-CERAMIC CHIP;C1608 CH1H470JT	
C168	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C169	61619-910-339	C-ELEC.CHIP;UWX1V3R3 MCR2GB PI3 3.3U/35V	
C170	61619-908-011	C-ELEC.CHIP;UWX1C100 MCR2GB PI3 10U/16V	
C171	A1106-0153	C-TANTALUM,CHIP;SCS0J 106MR-A(6.3V/10U)	
C174	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C175	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C176	61454-153-330	C-CERAMIC CHIP;C1608 CH1H330JT	
C177	61454-154-222	C-CERAMIC CHIP;1608 B1H 222KT	
C178	61454-153-270	C-CERAMIC CHIP;C1608 CH1H270JT	
C179	61454-243-221	C-ELEC.CHIP;ECE-V0JA220R	
C180	61454-153-470	C-CERAMIC CHIP;C1608 CH1H470JT	
C181	61454-153-100	C-CERAMIC CHIP;C1608 CH1H100DT	
C182	61454-153-680	C-CERAMIC CHIP;C1608 CH1H680JT	
C183	61454-153-100	C-CERAMIC CHIP;C1608 CH1H100DT	
C184	61619-910-339	C-ELEC.CHIP;UWX1V3R3 MCR2GB PI3 3.3U/35V	
C185	A1106-0153	C-TANTALUM,CHIP;SCS0J 106MR-A(6.3V/10U)	
C186	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C187	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C188	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C189	61619-908-011	C-ELEC.CHIP;UWX1C100 MCR2GB PI3 10U/16V	
C190	61619-908-011	C-ELEC.CHIP;UWX1C100 MCR2GB PI3 10U/16V	
C191	61619-908-011	C-ELEC.CHIP;UWX1C100 MCR2GB PI3 10U/16V	
C192	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C193	A1106-0153	C-TANTALUM,CHIP;SCS0J 106MR-A(6.3V/10U)	
C194	61454-153-150	C-CERAMIC CHIP;C1608 CH1H150JT	
C195	61454-153-220	C-CERAMIC CHIP;C1608 CH1H220JT	
C196	61454-153-221	C-CERAMIC CHIP;C1608 CH1H221JT	
C197	61454-157-473	C-CERAMIC CHIP;C1608 JF1C 473ZT	
C198	61454-153-151	C-CERAMIC CHIP;C1608 CH1H151JT	
C199	61454-153-331	C-CERAMIC CHIP;C1608 CH1H331JT	
C200	61454-153-391	C-CERAMIC CHIP;C1608 JB1H 391KT	
C201	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C202	61454-153-181	C-CERAMIC CHIP;C1608 CH1H181JT	
C203	61454-243-221	C-ELEC.CHIP;ECE-V0JA220R	
C207	61454-243-221	C-ELEC.CHIP;ECE-V0JA220R	
C209	61454-154-332	C-CERAMIC CHIP;C1608 B1H 332KT	
C211	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C212	61454-153-470	C-CERAMIC CHIP;C1608 CH1H470JT	
C214	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C215	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C217	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C218	61454-153-100	C-CERAMIC CHIP;C1608 CH1H100DT	
C219	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C221	61454-153-820	C-CERAMIC CHIP;C1608 CH1H820JT	
C222	61454-243-221	C-ELEC.CHIP;ECE-V0JA220R	
C223	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C224	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C225	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C226	61454-243-221	C-ELEC.CHIP;ECE-V0JA220R	
C227	61454-157-473	C-CERAMIC CHIP;C1608 JF1C 473ZT	

Loca.No	Part No	Description & Specification	Remark
C229	61454-154-472	C-CERAMIC CHIP;C1608 JB1H 472KT	
C230	61454-154-681	C-CERAMIC CHIP;C1608 B1H 681KT	
C231	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C232	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C233	A1106-0153	C-TANTALUM,CHIP;SCS0J 106MR-A(6.3V/10U)	
C234	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C235	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C237	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C238	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C239	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C240	61454-243-221	C-ELEC.CHIP;ECE-V0JA220R	
C241	61454-153-111	C-CERAMIC CHIP;C1608 CH1H111JT	
C242	61454-243-221	C-ELEC.CHIP;ECE-V0JA220R	
C243	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C244	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C245	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C246	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C247	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C248	61454-243-221	C-ELEC.CHIP;ECE-V0JA220R	
C249	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C250	61454-153-150	C-CERAMIC CHIP;C1608 CH1H150JT	
C251	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C252	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C253	61454-154-102	C-CERAMIC CHIP;C1608 B1H 102KT	
C254	61454-154-102	C-CERAMIC CHIP;C1608 B1H 102KT	
C255	61454-153-391	C-CERAMIC CHIP;C1608 JB1H 391KT	
C256	A1106-0028	C-TANTALUM,CHIP;CS 20V T 475-M C3528 SCS1D 475MR-B	
C257	61454-154-102	C-CERAMIC CHIP;C1608 B1H 102KT	
C258	61454-243-221	C-ELEC.CHIP;ECE-V0JA220R	
C259	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C260	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C261	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C262	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C263	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C264	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C265	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C266	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C267	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C268	61454-153-470	C-CERAMIC CHIP;C1608 CH1H470JT	
C269	61454-154-561	C-CERAMIC CHIP;C1608 B1H 561KT	
C271	61454-153-120	C-CERAMIC CHIP;C1608 CH1H120JT	
C272	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C274	61454-153-101	C-CERAMIC CHIP;C1608 CH1H101JT	
C275	61454-153-151	C-CERAMIC CHIP;C1608 CH1H151JT	
C276	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C277	61454-153-820	C-CERAMIC CHIP;C1608 CH1H820JT	
C278	61454-243-221	C-ELEC.CHIP;ECE-V0JA220R	
C279	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C280	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C281	61454-153-220	C-CERAMIC CHIP;C1608 CH1H220JT	
C298	61454-153-101	C-CERAMIC CHIP;C1608 CH1H101JT	
C299	61454-153-390	C-CERAMIC CHIP;C1608 CH1H390JT	
C300	A1106-0150	C-TANTALUM,CHIP;SCS0J 226MR-B(6.3V/22U)	
C301	61454-243-221	C-ELEC.CHIP;ECE-V0JA220R	
CN101	B6010-0871	CONNECTOR-WAFER;53398-0590 WHT	
D102	62169-901-101	DIODE CHIP;DAN202U(T146)	
D104	62169-901-101	DIODE CHIP;DAN202U(T146)	
D105	62169-901-077	DIODE.CHIP;MA110-(TX)	
D106	62169-901-077	DIODE.CHIP;MA110-(TX)	
D107	62169-901-062	DIODE.CHIP;DCC010TA-F	
IC101	B4012-0198	IC-LINEAR;NJM2249M SOP	
IC102	B4008-1077	IC;NJM2406F SOP	
IC103	B4014-0040	IC-CCD;CXL1506M SOP	
IC104	B4008-1040	IC;CXA1700R QFP	
IC105	B4008-1124	IC;M52358VP SOP	
IC106	62119-121-033	IC-FP;CXA1202R-T3	

Loca.No	Part No	Description & Specification	Remark
JR301	61079-918-000	R-CHIP;RH C1608 CS 000-J	
L101	B1160-0029	INDUCTOR,CHIP;8.2UH-J 73 NL252018T-8R2J C2520	
L102	B1160-0032	INDUCTOR,CHIP;33UH-J 73 NL252018T-330J C2520	
L103	B1160-0037	INDUCTOR,CHIP;330UH-J 73 NL322522T-331J C3225	
L104	B1160-0011	INDUCTOR,CHIP;10UH-K 73 NLC322522T-100K C3225	
L105	62429-962-102	INDUCTOR-CHIP;NL322522T 101-J	
L106	B1160-0037	INDUCTOR,CHIP;330UH-J 73 NL322522T-331J C3225	
L107	B1160-0040	INDUCTOR,CHIP;33UH-K 73 NLC252018T-330K C2520	
L108	B1160-0011	INDUCTOR,CHIP;10UH-K 73 NLC322522T-100K C3225	
L109	B1160-0030	INDUCTOR,CHIP;10UH-J 73 NL252018T-100J C2520	
L111	B1160-0033	INDUCTOR,CHIP;56UH-J 73 NL252018T-560J C2520	
L112	62429-962-181	INDUCTOR-CHIP;NL322522T 181-J	
L113	62429-962-181	INDUCTOR-CHIP;NL322522T 181-J	
L114	B1160-0039	INDUCTOR,CHIP;10UH-K 73 NLC252018T-100K C2520	
L115	B1160-0040	INDUCTOR,CHIP;33UH-K 73 NLC252018T-330K C2520	
L116	B1160-0028	INDUCTOR,CHIP;4.7UH-J 73 NL252018T-4R7J C2520	
L117	B1160-0028	INDUCTOR,CHIP;4.7UH-J 73 NL252018T-4R7J C2520	
L119	B1160-0037	INDUCTOR,CHIP;330UH-J 73 NL322522T-331J C3225	
L120	B1160-0038	INDUCTOR,CHIP;470UH-J 73 NL322522T-471J C3225	
L121	B1160-0032	INDUCTOR,CHIP;33UH-J 73 NL252018T-330J C2520	
L122	B1160-0040	INDUCTOR,CHIP;33UH-K 73 NLC252018T-330K C2520	
L123	B1160-0040	INDUCTOR,CHIP;33UH-K 73 NLC252018T-330K C2520	
L124	62429-962-470	INDUCTOR-CHIP;NL322522T 470-J	
L125	B1160-0033	INDUCTOR,CHIP;56UH-J 73 NL252018T-560J C2520	
L126	B1160-0037	INDUCTOR,CHIP;330UH-J 73 NL322522T-331J C3225	
L127	B1160-0040	INDUCTOR,CHIP;33UH-K 73 NLC252018T-330K C2520	
L128	62429-962-152	INDUCTOR-CHIP;NL322522T 151-J	
L129	B1160-0040	INDUCTOR,CHIP;33UH-K 73 NLC252018T-330K C2520	
L130	B1160-0008	INDUCTOR,CHIP;220UH-K 73 NLC322522T-221K C3225	
L131	B1160-0008	INDUCTOR,CHIP;220UH-K 73 NLC322522T-221K C3225	
L132	62429-962-339	INDUCTOR CHIP;NL322522T 3R3-J	
L133	62429-962-102	INDUCTOR-CHIP;NL322522T 101-J	
L134	B1160-0008	INDUCTOR,CHIP;220UH-K 73 NLC322522T-221K C3225	
L135	62429-962-561	INDUCTOR-CHIP;NL322522T 560-J	
L136	B1160-0039	INDUCTOR,CHIP;10UH-K 73 NLC252018T-100K C2520	
L137	62429-962-100	INDUCTOR-CHIP;NL322522T 100-J	
L140	62429-962-124	INDUCTOR-CHIP;NL322522T 1R0-K	
L141	B1160-0028	INDUCTOR,CHIP;4.7UH-J 73 NL252018T-4R7J C2520	
L142	B1160-0040	INDUCTOR,CHIP;33UH-K 73 NLC252018T-330K C2520	
L143	B1160-0040	INDUCTOR,CHIP;33UH-K 73 NLC252018T-330K C2520	
L144	B1160-0040	INDUCTOR,CHIP;33UH-K 73 NLC252018T-330K C2520	
Q102	62129-301-115	TRANSISTOR.CHIP;2SB 1119(REEL)T-TC	
Q103	62129-303-012	TRANSISTOR-CHIP;DTC144EU(T106)	
Q106	62129-302-023	TRANSISTOR-CHIP;2SA1576-R(T106)	
Q107	62129-303-012	TRANSISTOR-CHIP;DTC144EU(T106)	
Q109	62129-302-022	TRANSISTOR-CHIP;2SC4081-R(T106)	
Q110	62129-302-022	TRANSISTOR-CHIP;2SC4081-R(T106)	
Q111	62129-302-023	TRANSISTOR-CHIP;2SA1576-R(T106)	
Q112	62129-302-023	TRANSISTOR-CHIP;2SA1576-R(T106)	
Q113	62129-302-022	TRANSISTOR-CHIP;2SC4081-R(T106)	
Q114	62129-302-022	TRANSISTOR-CHIP;2SC4081-R(T106)	
Q115	62129-302-022	TRANSISTOR-CHIP;2SC4081-R(T106)	
Q116	62129-302-022	TRANSISTOR-CHIP;2SC4081-R(T106)	
Q117	62129-302-022	TRANSISTOR-CHIP;2SC4081-R(T106)	
Q118	62129-302-022	TRANSISTOR-CHIP;2SC4081-R(T106)	
Q119	62129-302-022	TRANSISTOR-CHIP;2SC4081-R(T106)	
Q120	62129-302-022	TRANSISTOR-CHIP;2SC4081-R(T106)	
Q121	62129-302-022	TRANSISTOR-CHIP;2SC4081-R(T106)	
Q122	62129-302-022	TRANSISTOR-CHIP;2SC4081-R(T106)	
Q123	62129-303-011	TRANSISTOR-CHIP;DTA144EU(T106)	
Q124	62129-301-116	TRANSISTOR.CHIP;2SC 3142(REEL)	
Q125	62129-302-022	TRANSISTOR-CHIP;2SC4081-R(T106)	
Q126	62129-302-022	TRANSISTOR-CHIP;2SC4081-R(T106)	
Q127	62129-302-022	TRANSISTOR-CHIP;2SC4081-R(T106)	
Q128	62129-302-022	TRANSISTOR-CHIP;2SC4081-R(T106)	
Q129	62129-302-022	TRANSISTOR-CHIP;2SC4081-R(T106)	

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Q130	62129-303-011	TRANSISTOR-CHIP,DTA144EU(T106)	
Q131	62129-303-011	TRANSISTOR-CHIP,DTA144EU(T106)	
Q133	62129-302-022	TRANSISTOR-CHIP,2SC4081-R(T106)	
Q134	62129-302-022	TRANSISTOR-CHIP,2SC4081-R(T106)	
Q137	62129-302-022	TRANSISTOR-CHIP,2SC4081-R(T106)	
Q138	62129-302-022	TRANSISTOR-CHIP,2SC4081-R(T106)	
Q139	62129-302-022	TRANSISTOR-CHIP,2SC4081-R(T106)	
Q140	62129-302-022	TRANSISTOR-CHIP,2SC4081-R(T106)	
Q141	62129-302-022	TRANSISTOR-CHIP,2SC4081-R(T106)	
Q142	62129-302-022	TRANSISTOR-CHIP,2SC4081-R(T106)	
Q143	62129-302-023	TRANSISTOR-CHIP,2SA1576-R(T106)	
Q144	62129-303-011	TRANSISTOR-CHIP,DTA144EU(T106)	
Q145	62129-302-022	TRANSISTOR-CHIP,2SC4081-R(T106)	
Q146	62129-302-022	TRANSISTOR-CHIP,2SC4081-R(T106)	
Q147	62129-303-011	TRANSISTOR-CHIP,DTA144EU(T106)	
Q148	62129-303-012	TRANSISTOR-CHIP,DTC144EU(T106)	
Q149	62129-303-012	TRANSISTOR-CHIP,DTC144EU(T106)	
Q150	62129-303-012	TRANSISTOR-CHIP,DTC144EU(T106)	
Q151	62129-303-012	TRANSISTOR-CHIP,DTC144EU(T106)	
Q152	62129-302-023	TRANSISTOR-CHIP,2SA1576-R(T106)	
Q153	62129-303-011	TRANSISTOR-CHIP,DTA144EU(T106)	
Q154	62129-302-023	TRANSISTOR-CHIP,2SA1576-R(T106)	
Q155	62129-302-023	TRANSISTOR-CHIP,2SA1576-R(T106)	
Q156	62129-303-012	TRANSISTOR-CHIP,DTC144EU(T106)	
Q157	62129-303-012	TRANSISTOR-CHIP,DTC144EU(T106)	
Q158	62129-303-011	TRANSISTOR-CHIP,DTA144EU(T106)	
Q159	62129-302-023	TRANSISTOR-CHIP,2SA1576-R(T106)	
Q160	62129-302-022	TRANSISTOR-CHIP,2SC4081-R(T106)	
Q161	62129-303-012	TRANSISTOR-CHIP,DTC144EU(T106)	
R101	61079-918-000	R-CHIP,RH C1608 CS 000-J	
R102	61079-918-105	R-CHIP,RH C1608 CS 105-J	
R104	61079-918-471	R-CHIP,RH C1608 CS 471-J	
R105	61079-918-682	R-CHIP,RH C1608 CS 682-J	
R106	61079-918-392	R-CHIP,RH C1608 CS 392-J	
R107	61079-918-182	R-CHIP,RH C1608 CS 182-J	
R108	A1020-0598	R-CHIP,RH 1/16 CS 123-F C1608	
R109	A1020-0598	R-CHIP,RH 1/16 CS 123-F C1608	
R110	A1020-0592	R-CHIP,RH 1/16 CS 103-F C1608	
R111	A1020-0598	R-CHIP,RH 1/16 CS 123-F C1608	
R112	61079-918-332	R-CHIP,RH C1608 CS 332-J	
R113	61079-918-562	R-CHIP,RH C1608 CS 562-J	
R114	61079-918-222	R-CHIP,RH C1608 CS 222-J	
R115	61079-918-222	R-CHIP,RH C1608 CS 222-J	
R116	61079-918-682	R-CHIP,RH C1608 CS 682-J	
R117	A1020-0430	R-CHIP,RH 1/16 CS 203-J C1608 RMC 1/16 20K-J	
R118	61079-918-272	R-CHIP,RH C1608 CS 272-J	
R120	A1020-0591	R-CHIP,RH 1/16 CS 102-F C1608	
R121	A1020-0591	R-CHIP,RH 1/16 CS 102-F C1608	
R122	61079-918-822	R-CHIP,RH C1608 CS 822-J	
R123	61079-918-122	R-CHIP,RH C1608 CS 122-J	
R124	61079-918-822	R-CHIP,RH C1608 CS 822-J	
R125	61079-918-221	R-CHIP,RH C1608 CS 221-J	
R126	61079-918-121	R-CHIP,RH C1608 CS 121-J	
R127	61079-918-472	R-CHIP,RH C1608 CS 472-J	
R128	61079-918-272	R-CHIP,RH C1608 CS 272-J	
R131	61079-918-222	R-CHIP,RH C1608 CS 222-J	
R132	61079-918-472	R-CHIP,RH C1608 CS 472-J	
R133	61079-918-681	R-CHIP,RH C1608 CS 681-J	
R134	61079-918-222	R-CHIP,RH C1608 CS 222-J	
R135	61079-918-750	R-CHIP,RH C1608 CS 750-J	
R136	A1020-0591	R-CHIP,RH 1/16 CS 102-F C1608	
R138	A1020-0591	R-CHIP,RH 1/16 CS 102-F C1608	
R139	61079-918-681	R-CHIP,RH C1608 CS 681-J	
R140	61079-918-471	R-CHIP,RH C1608 CS 471-J	
R141	61079-918-561	R-CHIP,RH C1608 CS 561-J	
R142	61079-918-681	R-CHIP,RH C1608 CS 681-J	

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R143	61079-918-101	R-CHIP;RH C1608 CS 101-J	
R144	61079-918-561	R-CHIP;RH C1608 CS 561-J	
R145	61079-918-221	R-CHIP;RH C1608 CS 221-J	
R146	61079-918-222	R-CHIP;RH C1608 CS 222-J	
R147	61079-918-339	R-CHIP;RH C1608 CS 3R3-J	
R148	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R149	61079-918-222	R-CHIP;RH C1608 CS 222-J	
R150	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R151	61079-918-221	R-CHIP;RH C1608 CS 221-J	
R152	61079-918-561	R-CHIP;RH C1608 CS 561-J	
R153	61079-918-561	R-CHIP;RH C1608 CS 561-J	
R154	61079-918-123	R-CHIP;RH C1608 CS 123-J	
R155	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R156	61079-918-564	R-CHIP;RH C1608 CS 564-J	
R157	61079-918-390	R-CHIP;RH C1608 CS 390-J	
R158	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R159	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R160	61079-918-390	R-CHIP;RH C1608 CS 390-J	
R161	61079-918-123	R-CHIP;RH C1608 CS 123-J	
R162	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R163	61079-918-472	R-CHIP;RH C1608 CS 472-J	
R164	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R165	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R166	61079-918-183	R-CHIP;RH C1608 CS 183-J	
R167	61079-918-182	R-CHIP;RH C1608 CS 182-J	
R169	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R170	61079-918-000	R-CHIP;RH C1608 CS 000-J	
R171	61079-918-823	R-CHIP;RH C1608 CS 823-J	
R172	61079-918-121	R-CHIP;RH C1608 CS 121-J	
R175	61079-918-562	R-CHIP;RH C1608 CS 562-J	
R176	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R177	61079-918-392	R-CHIP;RH C1608 CS 392-J	
R178	61079-918-152	R-CHIP;RH C1608 CS 152-J	
R180	61079-918-183	R-CHIP;RH C1608 CS 183-J	
R181	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R182	61079-918-472	R-CHIP;RH C1608 CS 472-J	
R183	61079-918-560	R-CHIP;RH C1608 CS 560-J	
R184	61079-918-681	R-CHIP;RH C1608 CS 681-J	
R185	61079-918-561	R-CHIP;RH C1608 CS 561-J	
R186	61079-918-471	R-CHIP;RH C1608 CS 471-J	
R187	61079-918-122	R-CHIP;RH C1608 CS 122-J	
R188	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R191	A1020-0369	R-CHIP;RH 1/10 CS 183-F C2012 RMC	
R192	61079-918-182	R-CHIP;RH C1608 CS 182-J	
R193	61079-918-680	R-CHIP;RH C1608 CS 680-J	
R194	61079-918-682	R-CHIP;RH C1608 CS 682-J	
R195	61079-918-471	R-CHIP;RH C1608 CS 471-J	
R196	61079-918-561	R-CHIP;RH C1608 CS 561-J	
R197	61079-918-242	R-CHIP;RH C1608 CS 242-J	
R198	61079-918-271	R-CHIP;RH C1608 CS 271-J	
R199	61079-918-680	R-CHIP;RH C1608 CS 680-J	
R200	61079-918-390	R-CHIP;RH C1608 CS 390-J	
R201	61079-918-561	R-CHIP;RH C1608 CS 561-J	
R202	61079-918-182	R-CHIP;RH C1608 CS 182-J	
R203	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R205	61079-918-223	R-CHIP;RH C1608 CS 223-J	
R206	61079-918-223	R-CHIP;RH C1608 CS 223-J	
R207	61079-918-561	R-CHIP;RH C1608 CS 561-J	
R208	61079-918-331	R-CHIP;RH C1608 CS 331-J	
R209	61079-918-222	R-CHIP;RH C1608 CS 222-J	
R210	61079-918-333	R-CHIP;RH C1608 CS 333-J	
R211	61079-918-221	R-CHIP;RH C1608 CS 221-J	
R212	61079-918-681	R-CHIP;RH C1608 CS 681-J	
R213	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R214	61079-918-821	R-CHIP;RH C1608 CS 821-J	
R215	61079-918-102	R-CHIP;RH C1608 CS 102-J	

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R216	61079-918-472	R-CHIP;RH C1608 CS 472-J	
R217	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R218	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R219	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R220	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R221	61079-916-332	R-CHIP;RH C2012 CS 332-F	
R222	61079-918-122	R-CHIP;RH C1608 CS 122-J	
R223	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R225	61079-918-821	R-CHIP;RH C1608 CS 821-J	
R226	61079-918-333	R-CHIP;RH C1608 CS 333-J	
R227	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R228	61079-918-153	R-CHIP;RH C1608 CS 153-J	
R229	61079-918-122	R-CHIP;RH C1608 CS 122-J	
R232	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R233	61079-918-561	R-CHIP;RH C1608 CS 561-J	
R234	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R235	61079-918-471	R-CHIP;RH C1608 CS 471-J	
R236	61079-918-182	R-CHIP;RH C1608 CS 182-J	
R237	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R238	61079-918-271	R-CHIP;RH C1608 CS 271-J	
R239	61079-918-471	R-CHIP;RH C1608 CS 471-J	
R240	61079-918-561	R-CHIP;RH C1608 CS 561-J	
R241	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R242	61079-918-562	R-CHIP;RH C1608 CS 562-J	
R243	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R244	61079-918-471	R-CHIP;RH C1608 CS 471-J	
R245	61079-918-472	R-CHIP;RH C1608 CS 472-J	
R246	61079-918-472	R-CHIP;RH C1608 CS 472-J	
R247	61079-918-471	R-CHIP;RH C1608 CS 471-J	
R250	61079-918-682	R-CHIP;RH C1608 CS 682-J	
R251	61079-918-223	R-CHIP;RH C1608 CS 223-J	
R252	61079-918-153	R-CHIP;RH C1608 CS 153-J	
R253	61079-918-000	R-CHIP;RH C1608 CS 000-J	
R254	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R255	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R256	61079-918-473	R-CHIP;RH C1608 CS 473-J	
R257	61079-918-221	R-CHIP;RH C1608 CS 221-J	
R259	61079-918-222	R-CHIP;RH C1608 CS 222-J	
R260	61079-918-000	R-CHIP;RH C1608 CS 000-J	
R261	61079-918-272	R-CHIP;RH C1608 CS 272-J	
R262	61079-918-561	R-CHIP;RH C1608 CS 561-J	
R263	61079-918-154	R-CHIP;RH C1608 CS 154-J	
R264	61079-918-154	R-CHIP;RH C1608 CS 154-J	
R265	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R266	61079-918-823	R-CHIP;RH C1608 CS 823-J	
R267	61079-918-151	R-CHIP;RH C1608 CS 151-J	
R268	61079-918-122	R-CHIP;RH C1608 CS 122-J	
R271	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R272	61079-918-152	R-CHIP;RH C1608 CS 152-J	
R273	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R274	61079-918-222	R-CHIP;RH C1608 CS 222-J	
R275	61079-918-473	R-CHIP;RH C1608 CS 473-J	
R276	61079-918-223	R-CHIP;RH C1608 CS 223-J	
R277	61079-918-822	R-CHIP;RH C1608 CS 822-J	
R278	61079-918-182	R-CHIP;RH C1608 CS 182-J	
R279	61079-918-823	R-CHIP;RH C1608 CS 823-J	
R280	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R281	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R282	61079-918-222	R-CHIP;RH C1608 CS 222-J	
R283	61079-918-472	R-CHIP;RH C1608 CS 472-J	
R284	61079-918-333	R-CHIP;RH C1608 CS 333-J	
R285	61079-918-682	R-CHIP;RH C1608 CS 682-J	
R286	61079-918-472	R-CHIP;RH C1608 CS 472-J	
R287	61079-918-682	R-CHIP;RH C1608 CS 682-J	
R288	61079-918-333	R-CHIP;RH C1608 CS 333-J	
R289	61079-918-121	R-CHIP;RH C1608 CS 121-J	

Loca No	Part No	Description & Specification	Remark
R290	61079-918-561	R-CHIP;RH C1608 CS 561-J	
R291	61079-918-222	R-CHIP;RH C1608 CS 222-J	
R292	61079-918-221	R-CHIP;RH C1608 CS 221-J	
R293	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R294	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R295	61079-918-332	R-CHIP;RH C1608 CS 332-J	
R296	61079-918-472	R-CHIP;RH C1608 CS 472-J	
R297	61079-918-223	R-CHIP;RH C1608 CS 223-J	
R298	61079-918-152	R-CHIP;RH C1608 CS 152-J	
R299	61079-918-473	R-CHIP;RH C1608 CS 473-J	
R300	61079-918-273	R-CHIP;RH C1608 CS 273-J	
R301	61079-918-273	R-CHIP;RH C1608 CS 273-J	
R302	61079-918-473	R-CHIP;RH C1608 CS 473-J	
R303	61079-918-223	R-CHIP;RH C1608 CS 223-J	
R304	61079-918-152	R-CHIP;RH C1608 CS 152-J	
R305	61079-918-181	R-CHIP;RH C1608 CS 181-J	
R306	61079-918-333	R-CHIP;RH C1608 CS 333-J	
R307	61079-918-821	R-CHIP;RH C1608 CS 821-J	
R308	61079-918-221	R-CHIP;RH C1608 CS 221-J	
R309	61079-918-331	R-CHIP;RH C1608 CS 331-J	
R310	61079-918-151	R-CHIP;RH C1608 CS 151-J	
R311	61079-918-682	R-CHIP;RH C1608 CS 682-J	
R312	61079-918-331	R-CHIP;RH C1608 CS 331-J	
R313	61079-918-473	R-CHIP;RH C1608 CS 473-J	
R314	61079-918-561	R-CHIP;RH C1608 CS 561-J	
R315	61079-918-330	R-CHIP;RH C1608 CS 330-J	
R316	61079-918-272	R-CHIP;RH C1608 CS 272-J	
R317	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R318	61079-918-273	R-CHIP;RH C1608 CS 273-J	
R319	61079-918-000	R-CHIP;RH C1608 CS 000-J	
R320	61079-918-182	R-CHIP;RH C1608 CS 182-J	
R321	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R322	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R323	61079-918-100	R-CHIP;RH C1608 CS 100-J	
R324	61079-918-223	R-CHIP;RH C1608 CS 223-J	
R325	61079-918-333	R-CHIP;RH C1608 CS 333-J	
R326	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R327	61079-918-271	R-CHIP;RH C1608 CS 271-J	
R328	61079-918-220	R-CHIP;RH C1608 CS 220-J	
R329	61079-918-221	R-CHIP;RH C1608 CS 221-J	
R330	61079-918-122	R-CHIP;RH C1608 CS 122-J	
R341	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R342	61079-918-472	R-CHIP;RH C1608 CS 472-J	
R343	61079-918-100	R-CHIP;RH C1608 CS 100-J	
R344	61079-918-392	R-CHIP;RH C1608 CS 392-J	
R345	61079-918-471	R-CHIP;RH C1608 CS 471-J	
R347	61079-918-222	R-CHIP;RH C1608 CS 222-J	
R350	61079-918-000	R-CHIP;RH C1608 CS 000-J	
R351	61079-918-000	R-CHIP;RH C1608 CS 000-J	
R352	61079-918-000	R-CHIP;RH C1608 CS 000-J	
R355	61079-918-000	R-CHIP;RH C1608 CS 000-J	
R356	61079-918-000	R-CHIP;RH C1608 CS 000-J	
R357	61079-918-000	R-CHIP;RH C1608 CS 000-J	
TP101	B6010-0893	CONNECTOR-HOUSING;SD-52357-0691 WHT	
TP102	B6010-0887	CONNECTOR-HOUSING;SD-52357-2491 WHT	
VR101	B1056-0051	VR-SEMI CHIP;EVM1SSX50B54 50KB CERMET	
VR102	B1056-0051	VR-SEMI CHIP;EVM1SSX50B54 50KB CERMET	
VR103	B1056-0021	VR-SEMI CHIP;EVM1SSX50BE3 2.2KB CERMET	
VR105	B1056-0052	VR-SEMI CHIP;EVM1SSX50B52 500B CERMET	
VR106	B1056-0021	VR-SEMI CHIP;EVM1SSX50BE3 2.2KB CERMET	
VR107	B1056-0048	VR-SEMI CHIP;EVM1SSX50B24 20KB CERMET	
X101	B1280-0077	CRYSTAL;4.433619MHZ HC-49/U-S 20PPM	
AUDIO PARTS			
C431	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C432	61454-243-471	C-ELEC.CHIP;ECE-V0JA470P	
C433	61454-156-273	C-CERAMIC CHIP;C1608 JB1C 273KT	

Loca.No	Part No	Description & Specification	Remark
C434	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C436	61619-908-479	C-ELEC.CHIP;UWX1C4R7 MCR2GB PI3 4.7U/25V	
C437	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C442	61454-157-473	C-CERAMIC CHIP;C1608 JF1C 473ZT	
C443	61454-157-473	C-CERAMIC CHIP;C1608 JF1C 473ZT	
C445	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C446	61454-153-560	C-CERAMIC CHIP;C1608 CH1H560JT	
C448	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C449	61454-154-222	C-CERAMIC CHIP;1608 B1H 222KT	
C450	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C451	61619-911-010	C-ELEC.CHIP;UWX1H010 MCR2GB PI3 1U/50V	
C452	61619-908-011	C-ELEC.CHIP;UWX1C100 MCR2GB PI3 10U/16V	
C453	61454-154-222	C-CERAMIC CHIP;1608 B1H 222KT	
C454	61619-908-011	C-ELEC.CHIP;UWX1C100 MCR2GB PI3 10U/16V	
C455	61619-911-010	C-ELEC.CHIP;UWX1H010 MCR2GB PI3 1U/50V	
C456	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C457	61454-153-221	C-CERAMIC CHIP;C1608 CH1H221JT	
C458	61619-908-479	C-ELEC.CHIP;UWX1C4R7 MCR2GB PI3 4.7U/25V	
C459	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C460	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C471	61628-269-010	C-TANTAL.CHIP;TAJA104K035R	
C472	61454-155-223	C-CERAMIC CHIP;C1608 JB1C 223KT	
C473	61628-269-010	C-TANTAL.CHIP;TAJA104K035R	
C474	61619-908-011	C-ELEC.CHIP;UWX1C100 MCR2GB PI3 10U/16V	
C475	61454-154-562	C-CERAMIC CHIP;C1608 B1H 562KT	
C476	A1106-0155	C-TANTALUM,CHIP;SCS0J 476MR-C(6.3V/47U)	
C477	61628-269-010	C-TANTAL.CHIP;TAJA104K035R	
C490	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C491	61454-243-471	C-ELEC.CHIP;ECE-V0JA470P	
IC431	B4000-0028	IC-ROM;LA7454W QFP	
Q471	62129-302-022	TRANSISTOR-CHIP;2SC4081-R(T106)	
Q472	62129-302-022	TRANSISTOR-CHIP;2SC4081-R(T106)	
Q473	62129-302-022	TRANSISTOR-CHIP;2SC4081-R(T106)	
R431	61079-918-393	R-CHIP;RH C1608 CS 393-J	
R432	61079-918-623	R-CHIP;RH C1608 CS 623-J	
R433	61079-918-274	R-CHIP;RH C1608 CS 274-J	
R434	61079-918-123	R-CHIP;RH C1608 CS 123-J	
R436	61079-918-223	R-CHIP;RH C1608 CS 223-J	
R437	A1020-0347	R-CHIP;RMC 1/16 3.3M-J	
R440	61079-918-682	R-CHIP;RH C1608 CS 682-J	
R441	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R442	61079-918-182	R-CHIP;RH C1608 CS 182-J	
R443	61079-918-333	R-CHIP;RH C1608 CS 333-J	
R444	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R446	61079-918-153	R-CHIP;RH C1608 CS 153-J	
R451	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R452	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R453	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R454	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R455	61079-918-752	R-CHIP;RH C1608 CS 752-J	
R471	61079-918-222	R-CHIP;RH C1608 CS 222-J	
R472	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R473	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R474	61079-918-222	R-CHIP;RH C1608 CS 222-J	
R475	61079-918-122	R-CHIP;RH C1608 CS 122-J	
R476	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R477	61079-918-222	R-CHIP;RH C1608 CS 222-J	
R479	61079-918-223	R-CHIP;RH C1608 CS 223-J	
R480	61079-918-221	R-CHIP;RH C1608 CS 221-J	
R481	61079-918-273	R-CHIP;RH C1608 CS 273-J	
R482	61079-918-181	R-CHIP;RH C1608 CS 181-J	
R483	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R484	61079-918-472	R-CHIP;RH C1608 CS 472-J	
R485	61079-918-222	R-CHIP;RH C1608 CS 222-J	
R490	61079-918-000	R-CHIP;RH C1608 CS 000-J	
R491	61079-918-220	R-CHIP;RH C1608 CS 220-J	

Loca.No	Part No	Description & Specification	Remark
R492	61079-918-223	R-CHIP;RH C1608 CS 223-J	
R493	61079-918-183	R-CHIP;RH C1608 CS 183-J	
R494	61079-918-752	R-CHIP;RH C1608 CS 752-J	
R495	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R497	61079-918-684	R-CHIP;RH C1608 CS 684-J	
R499	61079-918-000	R-CHIP;RH C1608 CS 000-J	
VR431	B1056-0045	VR-SEMI CHIP;EVM1SSX50B14 10KB CERMET	
SYSTEM CONTROL PARTS			
BD501	62429-014-337	CHIP-FERRITE BEAD;HF50ACB322513-T	
C501	61454-243-221	C-ELEC.CHIP;ECE-V0JA220R	
C502	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C503	61454-153-100	C-CERAMIC CHIP;C1608 CH1H100DT	
C504	61454-153-080	C-CERAMIC CHIP;C1608 CH1H080DT	
C506	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C507	61454-243-101	C-ELEC.CHIP;ECE-V0JA101P	
C508	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C509	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C510	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C511	61454-244-471	C-ELEC.CHIP;ECE-V1CA470P	
C513	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C514	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C515	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C516	61454-153-330	C-CERAMIC CHIP;C1608 CH1H330JT	
C517	61454-153-220	C-CERAMIC CHIP;C1608 CH1H220JT	
C518	61454-153-120	C-CERAMIC CHIP;C1608 CH1H120JT	
C519	61454-153-120	C-CERAMIC CHIP;C1608 CH1H120JT	
C520	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C521	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C522	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C523	61454-154-102	C-CERAMIC CHIP;C1608 B1H 102KT	
C524	61454-154-102	C-CERAMIC CHIP;C1608 B1H 102KT	
C526	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C527	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C528	61454-154-472	C-CERAMIC CHIP;C1608 JB1H 472KT	
C529	61454-155-223	C-CERAMIC CHIP;C1608 JB1C 223KT	
C530	61454-155-223	C-CERAMIC CHIP;C1608 JB1C 223KT	
C531	61454-154-102	C-CERAMIC CHIP;C1608 B1H 102KT	
C532	61454-154-102	C-CERAMIC CHIP;C1608 B1H 102KT	
C533	61454-157-473	C-CERAMIC CHIP;C1608 JF1C 473ZT	
C534	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C535	61454-157-473	C-CERAMIC CHIP;C1608 JF1C 473ZT	
C536	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C537	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C538	61454-153-391	C-CERAMIC CHIP;C1608 JB1H 391KT	
C539	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C540	A1106-0150	C-TANTALUM,CHIP;SCS0J 226MR-B(6.3V/22U)	
C541	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C544	A1106-0083	C-TANTALUM,CHIP;CS 20V T 225-M C3528 SCN1D 225MR-B	
C545	A1100-0833	C-CERAMIC,CHIP;CK 73 X7R 16V T 224-K C3216 C3216X7	
C546	A1100-0833	C-CERAMIC,CHIP;CK 73 X7R 16V T 224-K C3216 C3216X7	
C547	61454-154-332	C-CERAMIC CHIP;C1608 B1H 332KT	
C548	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C549	61454-158-473	C-CERAMIC CHIP;C1608 JB1C 473KT	
C550	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C551	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C552	A1100-0833	C-CERAMIC,CHIP;CK 73 X7R 16V T 224-K C3216 C3216X7	
C553	61454-154-102	C-CERAMIC CHIP;C1608 B1H 102KT	
C555	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C556	61454-154-332	C-CERAMIC CHIP;C1608 B1H 332KT	
C557	61454-154-332	C-CERAMIC CHIP;C1608 B1H 332KT	
C558	61454-155-223	C-CERAMIC CHIP;C1608 JB1C 223KT	
C559	61454-243-471	C-ELEC.CHIP;ECE-V0JA470P	
C570	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C572	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C573	61454-153-151	C-CERAMIC CHIP;C1608 CH1H151JT	
C575	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	

Loca.No	Part No	Description & Specification	Remark
C576	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C577	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C578	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C579	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
C580	A1106-0153	C-TANTALUM,CHIP;SCS0J 106MR-A(6.3V/10U)	
C581	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C582	61454-153-331	C-CERAMIC CHIP;C1608 CH1H331JT	
C583	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
C586	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
C587	A1106-0127	C-TANTALUM,CHIP;CS 6.3V T 107-M C7343	
CN501	B6012-0230	CONNECTOR-HOUSING;52357-1691 WHT	
CN502	B6012-0229	CONNECTOR-HOUSING;52357-1291 WHT	
CN503	B6010-0894	CONNECTOR-HOUSING;IL-WXA-30S-VF-E1000 WHT	
CN504	B6010-0828	CONNECTOR-WAFER;53261-0990 WHT	
IC501	B4008-1038	IC;S-8420BF-T1 SOP	
IC502	B4004-0198	IC-LOGIC;BA6285FS SOP	
IC503	67199-0118-00	MICOM;CXP80P724 VN-405 QFP	
IC504	A4004-0197	IC-LOGIC;KA8322 QFP	
IC505	B4008-0916	IC-DRIVE;TPIC1327DF SOP	
IC506	B4008-0870	IC;LB1851M QFP(TP-T1)	
IC507	B4004-0199	IC-LOGIC;TC7SU04F SOP	
IC508	B4008-1078	IC-QFP;BU5997	
J501	61079-918-000	R-CHIP;RH C1608 CS 000-J	
L501	B1160-0010	INDUCTOR-CHIP;NLC322522T-101K	
L502	B1160-0033	INDUCTOR,CHIP;56UH-J 73 NL252018T-560J C2520	
L503	B1160-0010	INDUCTOR-CHIP;NLC322522T-101K	
L504	B1160-0010	INDUCTOR-CHIP;NLC322522T-101K	
L505	B1160-0010	INDUCTOR-CHIP;NLC322522T-101K	
L506	B1160-0010	INDUCTOR-CHIP;NLC322522T-101K	
Q501	62129-303-012	TRANSISTOR-CHIP;DTC144EU(T106)	
Q502	62129-302-023	TRANSISTOR-CHIP;2SA1576-R(T106)	
Q503	62129-302-023	TRANSISTOR-CHIP;2SA1576-R(T106)	
R501	61079-918-222	R-CHIP;RH C1608 CS 222-J	
R502	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R503	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R504	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R505	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R506	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R507	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R508	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R509	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R512	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R513	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R518	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R519	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R520	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R521	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R522	61079-916-334	R-CHIP;RH C2012 CS 334-F	
R523	A1020-0363	R-CHIP;RH 1/10 CS 153-F C2012 RMC	
R524	61079-916-334	R-CHIP;RH C2012 CS 334-F	
R525	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R526	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R527	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R528	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R529	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R530	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R532	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R533	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R534	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R537	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R538	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R539	61079-916-104	R-CHIP;RH C2012 CS 104-F	
R540	A1020-0369	R-CHIP;RH 1/10 CS 183-F C2012 RMC	
R541	61079-916-104	R-CHIP;RH C2012 CS 104-F	
R542	A1020-0369	R-CHIP;RH 1/10 CS 183-F C2012 RMC	
R543	61079-918-102	R-CHIP;RH C1608 CS 102-J	

Loca.No	Part No	Description & Specification	Remark
R544	61079-916-333	R-CHIP;RH C2012 CS 333-F	
R545	61079-916-333	R-CHIP;RH C2012 CS 333-F	
R546	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R547	61079-918-331	R-CHIP;RH C1608 CS 331-J	
R548	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R549	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R550	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R551	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R552	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R553	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R554	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R555	61079-916-333	R-CHIP;RH C2012 CS 333-F	
R556	A1020-0412	R-CHIP;RH 1/10 CS 683-F C2012 RMC	
R557	61079-916-333	R-CHIP;RH C2012 CS 333-F	
R558	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R559	61079-916-104	R-CHIP;RH C2012 CS 104-F	
R560	61079-217-101	R-CHIP;RH C3216 CS 101-J	
R561	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R566	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R567	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R568	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R569	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R570	61079-918-623	R-CHIP;RH C1608 CS 623-J	
R571	61079-918-223	R-CHIP;RH C1608 CS 223-J	
R572	61079-918-684	R-CHIP;RH C1608 CS 684-J	
R573	61079-918-471	R-CHIP;RH C1608 CS 471-J	
R574	61079-918-471	R-CHIP;RH C1608 CS 471-J	
R575	A1020-0430	R-CHIP;RH 1/16 CS 203-J C1608 RMC 1/16 20K-J	
R579	61079-918-393	R-CHIP;RH C1608 CS 393-J	
R580	61079-918-471	R-CHIP;RH C1608 CS 471-J	
R581	61079-918-000	R-CHIP;RH C1608 CS 000-J	
R584	61079-918-474	R-CHIP;RH C1608 CS 474-J	
R585	61079-918-474	R-CHIP;RH C1608 CS 474-J	
R586	61079-917-393	R-CHIP;RH C2012 CS 393-J	
R587	61079-918-331	R-CHIP;RH C1608 CS 331-J	
R588	61079-918-273	R-CHIP;RH C1608 CS 273-J	
R589	61079-917-010	R-CHIP;RH C2012 CS 010-J	
R590	61079-917-010	R-CHIP;RH C2012 CS 010-J	
R591	61079-918-292	R-CHIP;RH C1608 CS 2R2-J	
R592	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R593	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R594	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R595	A1020-0430	R-CHIP;RH 1/16 CS 203-J C1608 RMC 1/16 20K-J	
R598	61079-917-010	R-CHIP;RH C2012 CS 010-J	
R599	61079-917-010	R-CHIP;RH C2012 CS 010-J	
R600	61079-918-182	R-CHIP;RH C1608 CS 182-J	
R601	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R602	A1020-0689	R-CHIP;RH 1/16 CS 243-F C1608	
R603	61079-918-823	R-CHIP;RH C1608 CS 823-J	
R604	61079-918-224	R-CHIP;RH C1608 CS 224-J	
R607	61079-916-104	R-CHIP;RH C2012 CS 104-F	
R608	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R609	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R610	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R611	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R612	61079-918-273	R-CHIP;RH C1608 CS 273-J	
R613	61079-918-273	R-CHIP;RH C1608 CS 273-J	
R614	61079-918-292	R-CHIP;RH C1608 CS 2R2-J	
R615	61079-918-292	R-CHIP;RH C1608 CS 2R2-J	
R616	61079-918-472	R-CHIP;RH C1608 CS 472-J	
R617	61079-918-272	R-CHIP;RH C1608 CS 272-J	
R618	61079-918-471	R-CHIP;RH C1608 CS 471-J	
R619	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R620	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R621	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R622	61079-918-103	R-CHIP;RH C1608 CS 103-J	

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R624	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R625	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R626	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R630	61079-918-000	R-CHIP;RH C1608 CS 000-J	
R631	61079-918-000	R-CHIP;RH C1608 CS 000-J	
R635	61079-918-473	R-CHIP;RH C1608 CS 473-J	
R636	61079-918-473	R-CHIP;RH C1608 CS 473-J	
R640	61079-916-103	R-CHIP;RH C2012 CS 103-F	
R641	61079-916-104	R-CHIP;RH C2012 CS 104-F	
R642	A1020-0430	R-CHIP;RH 1/16 CS 203-J C1608 RMC 1/16 20K-J	
R643	61079-918-105	R-CHIP;RH C1608 CS 105-J	
R644	61079-918-473	R-CHIP;RH C1608 CS 473-J	
R646	61079-918-333	R-CHIP;RH C1608 CS 333-J	
R647	61079-918-393	R-CHIP;RH C1608 CS 393-J	
R648	61079-918-561	R-CHIP;RH C1608 CS 561-J	
R653	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R654	61079-918-103	R-CHIP;RH C1608 CS 103-J	
R655	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R657	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R658	61079-918-000	R-CHIP;RH C1608 CS 000-J	
R662	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R663	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R664	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R665	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R666	61079-918-104	R-CHIP;RH C1608 CS 104-J	
R667	61079-918-000	R-CHIP;RH C1608 CS 000-J	
R668	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R669	61079-918-000	R-CHIP;RH C1608 CS 000-J	
R670	61079-918-102	R-CHIP;RH C1608 CS 102-J	
R671	61079-918-473	R-CHIP;RH C1608 CS 473-J	
R672	61079-918-000	R-CHIP;RH C1608 CS 000-J	
R677	61079-918-334	R-CHIP;RH C1608 CS 334-J	
R678	61079-917-273	R-CHIP;RH C2012 CS 273-J	
R679	61079-918-473	R-CHIP;RH C1608 CS 473-J	
S501	B3000-0033	SW-PUSH;2C2P 2MM ML SH SPVC2-1 T	
S502	B3000-0033	SW-PUSH;2C2P 2MM ML SH SPVC2-1 T	
S503	63519-105-102	SW-TACT.CHIP;SKHMPT017A	
S504	63519-105-102	SW-TACT.CHIP;SKHMPT017A	
S505	B3018-0025	SW-TACT,CHIP;SKQGAF 6.4X5.2MM WHT 1KEY	
S506	B3018-0025	SW-TACT,CHIP;SKQGAF 6.4X5.2MM WHT 1KEY	
S507	B3018-0025	SW-TACT,CHIP;SKQGAF 6.4X5.2MM WHT 1KEY	
S508	B3018-0025	SW-TACT,CHIP;SKQGAF 6.4X5.2MM WHT 1KEY	
S509	63519-105-101	SW-TACT.CHIP;SKHMPS066A	
S510	63519-105-101	SW-TACT.CHIP;SKHMPS066A	
S511	63519-105-101	SW-TACT.CHIP;SKHMPS066A	
S512	63519-105-101	SW-TACT.CHIP;SKHMPS066A	
S513	63519-103-105	SW-SLIDE;HSW0882-01-020	
S514	B3012-0009	SW-ROTARY;SRBQ09	
VR501	B1056-0046	VR-SEMI CHIP;EVM1SSX50B15 100KB CERMET	
VR503	B1056-0053	VR-SEMI CHIP;EVM1SSX50B55 500KB CERMET	
X501	64539-021-010	CRYSTAL;P-3(32.768KHZ)	
X502	B1280-0112	CRYSTAL;11.718750MHZ HC-49/U-S 50PPM	
151	**69063-214-189**	**ASSY CAM CCD BOARD;VP-U12 PAL**	
CD01	A1106-0150	C-TANTALUM,CHIP;SCS0J 226MR-B(6.3V/22U)	
CD02	A1106-0025	C-TANTALUM,CHIP;CS 20V T 105-M C3216 SCS1D 105MR-A	
CD03	61454-153-820	C-CERAMIC CHIP;C1608 CH1H820JT	
CD04	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
CD05	A1106-0111	C-TANTALUM,CHIP;CS 35V T 105-M C3528 SCN1V 105MR-B	
CD06	A1106-0029	C-TANTALUM,CHIP;CS 20V T 106-M C6032 SCS1D 106MR-C	
CD07	61454-243-102	C-ELEC.CHIP;ECE-V1EA100P	
CD08	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
CD09	61454-243-221	C-ELEC.CHIP;ECE-V0JA220R	
CD10	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
CD11	61454-154-222	C-CERAMIC CHIP;1608 B1H 222KT	
CD12	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
CD13	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	

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CD14	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
CD15	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
CD16	61454-243-471	C-ELEC.CHIP;ECE-V0JA470P	
CD17	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
CD18	61619-908-011	C-ELEC.CHIP;UWX1C100 MCR2GB PI3 10U/16V	
CD19	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
CD20	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
CD21	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
CD22	61454-153-330	C-CERAMIC CHIP;C1608 CH1H330JT	
CD23	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
CD24	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
CD25	61454-243-221	C-ELEC.CHIP;ECE-V0JA220R	
CD27	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
CD28	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
CD29	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
CD30	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
CD31	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
CD32	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
CD33	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
CD34	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
CD35	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
CD36	61454-153-100	C-CERAMIC CHIP;C1608 CH1H100DT	
CD37	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
CD38	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
CD39	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
CD40	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
CD41	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
CD42	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
CD43	A1100-0675	C-CERAMIC,CHIP;CK 73 Y5V 16V T 225-Z C2012	
CD44	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
CD45	61454-157-333	C-CERAMIC CHIP;C1608 B1C 333T-K	
CD46	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
CD47	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
CD48	61619-908-011	C-ELEC.CHIP;UWX1C100 MCR2GB PI3 10U/16V	
CD49	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
CD50	61454-154-392	C-CERAMIC CHIP;C1608 B1H 392KT	
CD51	A1106-0150	C-TANTALUM,CHIP;SCS0J 226MR-B(6.3V/22U)	
CD52	A1106-0016	C-TANTALUM.CHIP;SCS1A 106MR-B(10V/10U)	
CD53	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
CD54	61454-154-472	C-CERAMIC CHIP;C1608 JB1H 472KT	
CD55	61454-154-472	C-CERAMIC CHIP;C1608 JB1H 472KT	
CD56	61454-154-472	C-CERAMIC CHIP;C1608 JB1H 472KT	
CD57	61454-154-472	C-CERAMIC CHIP;C1608 JB1H 472KT	
CD58	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
CD59	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
CD60	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
CD61	A1106-0150	C-TANTALUM,CHIP;SCS0J 226MR-B(6.3V/22U)	
CD62	61454-153-220	C-CERAMIC CHIP;C1608 CH1H220JT	
CND01	B6010-0771	CONNECTOR-WAFER;53047-0410 WHT	
CND02	B6013-0048	CONNECTOR-FPC;04-6214-020-010-800 WHT	
CND03	B6012-0226	CONNECTOR-HOUSING;52357-3091 WHT	
CND04	B6012-0226	CONNECTOR-HOUSING;52357-3091 WHT	
DD01	62169-901-076	DIODE.CHIP;MA141WA-(TX)	
DD02	B4112-0020	DIODE-SCHOTTKY,CHIP;MA721WA 30V 200MA 30PF T	
DD03	B4112-0020	DIODE-SCHOTTKY,CHIP;MA721WA 30V 200MA 30PF T	
FD01	A1242-0009	FILTER-LC,CHIP;EQ G355ENK-K5159=P3 100M T DELAY 10	
ICD01	B4014-0053	IC-CCD;ICX055-AK DIP	
ICD02	62119-701-134	IC-FP;KS7220-REEL	
ICD03	A4008-1069	IC;KA7302 SOP	
ICD04	A4012-0192	IC-LINEAR;KAD0228 SOP	
ICD05	B4004-0041	IC-LOGIC;TB6504F SOP	
ICD06	62119-402-030	IC-FP;NJM3414M(TE3)	
ICD07	62119-701-047	IC-FP;NJM2902M(TE2)	
LD01	B1160-0009	INDUCTOR,CHIP;22UH-K 73 NLC322522T-220K C3225	
LD02	B1160-0031	INDUCTOR,CHIP;22UH-J 73 NL252018T-220J C2520	
LD03	B1160-0009	INDUCTOR,CHIP;22UH-K 73 NLC322522T-220K C3225	

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LD04	B1160-0011	INDUCTOR,CHIP;10UH-K 73 NLC322522T-100K C3225	
LD05	B1160-0032	INDUCTOR,CHIP;33UH-J 73 NL252018T-330J C2520	
LD06	B1160-0009	INDUCTOR,CHIP;22UH-K 73 NLC322522T-220K C3225	
LD07	B1160-0011	INDUCTOR,CHIP;10UH-K 73 NLC322522T-100K C3225	
LD09	B1160-0035	INDUCTOR,CHIP;100UH-J 73 NL252018T-101J C2520	
LD10	B1160-0031	INDUCTOR,CHIP;22UH-J 73 NL252018T-220J C2520	
QD01	62139-601-657	FET;2SK 300-3(T7)	
QD02	A4060-0040	TR-W/RESISTOR;DTC143TU 200MW 100MA 50V SI/NPN T	
QD03	B4050-0088	TR-GENERAL,CHIP;IMZ1 300MW 100MA 50MHZ 50V SI/PNP	
QD04	62129-303-012	TRANSISTOR-CHIP;DTC144EU(T106)	
QD05	62129-301-071	TRANSISTOR.CHIP;DTC 144WK(TF96)	
QD06	62129-301-071	TRANSISTOR.CHIP;DTC 144WK(TF96)	
QD07	62129-303-006	TRANSISTOR-CHIP;IMX1	
QD08	B4050-0088	TR-GENERAL,CHIP;IMZ1 300MW 100MA 50MHZ 50V SI/PNP	
QD09	B4050-0088	TR-GENERAL,CHIP;IMZ1 300MW 100MA 50MHZ 50V SI/PNP	
QD10	62129-301-117	TRANSISTOR.CHIP;2SC 2812(REEL)L6-TA	
QD11	A4050-0104	TR-GENERAL,CHIP;2SA 1179	
QD12	B4050-0088	TR-GENERAL,CHIP;IMZ1 300MW 100MA 50MHZ 50V SI/PNP	
QD13	B4050-0088	TR-GENERAL,CHIP;IMZ1 300MW 100MA 50MHZ 50V SI/PNP	
QD14	62129-301-117	TRANSISTOR.CHIP;2SC 2812(REEL)L6-TA	
QD15	62129-303-006	TRANSISTOR-CHIP;IMX1	
QD16	62129-302-023	TRANSISTOR-CHIP;2SA1576-R(T106)	
RD01	61079-918-681	R-CHIP;RH C1608 CS 681-J	
RD02	61079-918-184	R-CHIP;RH C1608 CS 184-J	
RD03	61079-918-273	R-CHIP;RH C1608 CS 273-J	
RD04	61079-918-101	R-CHIP;RH C1608 CS 101-J	
RD05	61079-918-392	R-CHIP;RH C1608 CS 392-J	
RD06	61079-918-123	R-CHIP;RH C1608 CS 123-J	
RD07	61079-918-332	R-CHIP;RH.C1608 CS 332-J	
RD08	61079-918-222	R-CHIP;RH C1608 CS 222-J	
RD09	61079-918-105	R-CHIP;RH C1608 CS 105-J	
RD10	61079-918-221	R-CHIP;RH C1608 CS 221-J	
RD11	61079-918-104	R-CHIP;RH C1608 CS 104-J	
RD12	61079-918-104	R-CHIP;RH C1608 CS 104-J	
RD13	61079-918-105	R-CHIP;RH C1608 CS 105-J	
RD14	61079-918-104	R-CHIP;RH C1608 CS 104-J	
RD15	61079-918-391	R-CHIP;RH C1608 CS 391-J	
RD16	61079-918-563	R-CHIP;RH C1608 CS 563-J	
RD17	61079-918-104	R-CHIP;RH C1608 CS 104-J	
RD18	61079-918-391	R-CHIP;RH C1608 CS 391-J	
RD19	61079-918-563	R-CHIP;RH C1608 CS 563-J	
RD20	61079-918-100	R-CHIP;RH C1608 CS 100-J	
RD21	61079-918-472	R-CHIP;RH C1608 CS 472-J	
RD22	61079-918-104	R-CHIP;RH C1608 CS 104-J	
RD23	61079-918-473	R-CHIP;RH C1608 CS 473-J	
RD24	61079-918-122	R-CHIP;RH C1608 CS 122-J	
RD25	61079-918-103	R-CHIP;RH C1608 CS 103-J	
RD26	61079-918-333	R-CHIP;RH C1608 CS 333-J	
RD27	A1020-0453	R-CHIP;RH 1/16 CS 243-J C1608 RMC 1/16 24K-J	
RD28	61079-918-104	R-CHIP;RH C1608 CS 104-J	
RD29	A1020-0636	R-CHIP;RH 1/16 CS 333-F C1608	
RD30	A1020-0619	R-CHIP;RH 1/16 CS 223-F C1608	
RD31	61079-918-393	R-CHIP;RH C1608 CS 393-J	
RD32	61079-918-103	R-CHIP;RH C1608 CS 103-J	
RD33	61079-918-122	R-CHIP;RH C1608 CS 122-J	
RD34	61079-918-472	R-CHIP;RH C1608 CS 472-J	
RD35	61079-918-103	R-CHIP;RH C1608 CS 103-J	
RD36	61079-918-472	R-CHIP;RH C1608 CS 472-J	
RD37	61079-918-333	R-CHIP;RH C1608 CS 333-J	
RD38	61079-918-223	R-CHIP;RH C1608 CS 223-J	
RD39	61079-918-473	R-CHIP;RH C1608 CS 473-J	
RD41	61079-918-123	R-CHIP;RH C1608 CS 123-J	
RD42	61079-918-273	R-CHIP;RH C1608 CS 273-J	
RD43	61079-918-102	R-CHIP;RH C1608 CS 102-J	
RD44	61079-918-472	R-CHIP;RH C1608 CS 472-J	
RD45	61079-918-102	R-CHIP;RH C1608 CS 102-J	

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RD46	61079-918-472	R-CHIP;RH C1608 CS 472-J	
RD47	61079-918-222	R-CHIP;RH C1608 CS 222-J	
RD48	61079-918-472	R-CHIP;RH C1608 CS 472-J	
RD49	61079-918-332	R-CHIP;RH C1608 CS 332-J	
RD50	61079-918-103	R-CHIP;RH C1608 CS 103-J	
RD51	61079-918-102	R-CHIP;RH C1608 CS 102-J	
RD52	61079-918-472	R-CHIP;RH C1608 CS 472-J	
RD53	61079-918-000	R-CHIP;RH C1608 CS 000-J	
RD54	61079-918-102	R-CHIP;RH C1608 CS 102-J	
RD55	61079-918-102	R-CHIP;RH C1608 CS 102-J	
RD56	61079-918-102	R-CHIP;RH C1608 CS 102-J	
RD58	61079-918-000	R-CHIP;RH C1608 CS 000-J	
RD59	61079-918-100	R-CHIP;RH C1608 CS 100-J	
RD60	61079-918-100	R-CHIP;RH C1608 CS 100-J	
RD61	61079-918-103	R-CHIP;RH C1608 CS 103-J	
RD62	61079-918-103	R-CHIP;RH C1608 CS 103-J	
RD63	61079-918-101	R-CHIP;RH C1608 CS 101-J	
RD64	61079-918-101	R-CHIP;RH C1608 CS 101-J	
RD65	61079-918-101	R-CHIP;RH C1608 CS 101-J	
RD66	61079-918-101	R-CHIP;RH C1608 CS 101-J	
RD67	61079-918-101	R-CHIP;RH C1608 CS 101-J	
RD68	61079-918-101	R-CHIP;RH C1608 CS 101-J	
RD69	61079-918-101	R-CHIP;RH C1608 CS 101-J	
RD70	61079-918-101	R-CHIP;RH C1608 CS 101-J	
RD71	61079-918-100	R-CHIP;RH C1608 CS 100-J	
RD72	61079-917-478	R-CHIP;RH C2012 CS 4R7-J	
RD73	61079-917-478	R-CHIP;RH C2012 CS 4R7-J	
RD74	61079-918-274	R-CHIP;RH C1608 CS 274-J	
RD75	61079-918-683	R-CHIP;RH C1608 CS 683-J	
RD76	61079-918-123	R-CHIP;RH C1608 CS 123-J	
RD77	61079-918-153	R-CHIP;RH C1608 CS 153-J	
RD78	61079-918-472	R-CHIP;RH C1608 CS 472-J	
RD79	61079-917-100	R-CHIP;RH C2012 CS 100-J	
RD80	61079-918-222	R-CHIP;RH C1608 CS 222-J	
RD81	61079-918-472	R-CHIP;RH C1608 CS 472-J	
RD90	61079-918-000	R-CHIP;RH C1608 CS 000-J	
152	69063-214-190	ASSY CAM PROCESS BOARD;VP-U12 PAL	
BP01	A1247-0031	FILTER-EMI BEAD;FI 24OHM-100V -25/85 EF-CB-321611	
CNP01	B6010-0772	CONNECTOR-WAFER;53264-3092 WHT	
CNP02	B6010-0772	CONNECTOR-WAFER;53264-3092 WHT	
CNP03	B6010-0895	CONNECTOR-WAFER;IL-WXA-30P-HF-E1000 WHT	
CP01	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
CP02	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
CP03	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
CP04	61454-153-220	C-CERAMIC CHIP;C1608 CH1H220JT	
CP05	61454-158-473	C-CERAMIC CHIP;C1608 JB1C 473KT	
CP06	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
CP07	61454-243-471	C-ELEC.CHIP;ECE-V0JA470P	
CP08	61619-908-011	C-ELEC.CHIP;UWX1C100 MCR2GB Pl3 10U/16V	
CP09	61454-154-392	C-CERAMIC CHIP;C1608 B1H 392KT	
CP10	61454-154-472	C-CERAMIC CHIP;C1608 JB1H 472KT	
CP11	61454-154-472	C-CERAMIC CHIP;C1608 JB1H 472KT	
CP12	61454-154-472	C-CERAMIC CHIP;C1608 JB1H 472KT	
CP13	61454-244-471	C-ELEC.CHIP;ECE-V1CA470P	
CP14	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
CP15	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
CP16	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
CP17	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
CP18	61454-153-220	C-CERAMIC CHIP;C1608 CH1H220JT	
CP19	61454-153-470	C-CERAMIC CHIP;C1608 CH1H470JT	
CP20	61619-908-011	C-ELEC.CHIP;UWX1C100 MCR2GB Pl3 10U/16V	
CP21	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
CP22	61454-243-221	C-ELEC.CHIP;ECE-V0JA220R	
CP23	61454-153-470	C-CERAMIC CHIP;C1608 CH1H470JT	
CP24	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
CP25	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	

Loca.No	Part No	Description & Specification	Remark
CP26	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
CP27	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
CP28	61619-908-011	C-ELEC.CHIP;UWX1C100 MCR2GB PI3 10U/16V	
CP29	61454-243-221	C-ELEC.CHIP;ECE-V0JA220R	
CP30	61454-153-200	C-CERAMIC CHIP;C1608 CH1H200JT	
CP31	61454-154-103	C-CERAMIC CHIP;C1608 B1H 103KT	
CP32	61619-908-011	C-ELEC.CHIP;UWX1C100 MCR2GB PI3 10U/16V	
CP33	61454-243-221	C-ELEC.CHIP;ECE-V0JA220R	
CP34	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
CP35	61454-153-220	C-CERAMIC CHIP;C1608 CH1H220JT	
CP36	61619-908-011	C-ELEC.CHIP;UWX1C100 MCR2GB PI3 10U/16V	
CP37	61454-154-472	C-CERAMIC CHIP;C1608 JB1H 472KT	
CP38	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
CP39	61454-154-102	C-CERAMIC CHIP;C1608 B1H 102KT	
CP40	61454-154-102	C-CERAMIC CHIP;C1608 B1H 102KT	
CP41	61454-153-100	C-CERAMIC CHIP;C1608 CH1H100DT	
CP42	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
CP43	61454-153-100	C-CERAMIC CHIP;C1608 CH1H100DT	
CP44	61454-153-200	C-CERAMIC CHIP;C1608 CH1H200JT	
CP51	61454-153-220	C-CERAMIC CHIP;C1608 CH1H220JT	
CTP01	B1111-0025	C-TRIMMER,CERA;TZCO3P00A110 CTA 30-6.5PF	
CTP02	B1111-0025	C-TRIMMER,CERA;TZCO3P00A110 CTA 30-6.5PF	
DP01	A4112-0007	DIODE-SCHOTTKY,CHIP;SB01-05CP-(TB) 550V 2A 4.4PF	
DP02	62169-102-054	DIODE-SHOTTKY.CHIP;E10QS03-TE12R	
DP03	62169-901-030	DIODE.CHIP;MA141WK-(TX)	
DP04	62169-901-077	DIODE.CHIP;MA110-(TX)	
DP05	B4112-0020	DIODE-SCHOTTKY,CHIP;MA721WA 30V 200MA 30PF T	
DP06	B4112-0020	DIODE-SCHOTTKY,CHIP;MA721WA 30V 200MA 30PF T	
DP07	62169-901-077	DIODE.CHIP;MA110-(TX)	
DP08	62169-901-068	DIODE.CHIP;MA341-(TX)	
DP10	62169-901-077	DIODE.CHIP;MA110-(TX)	
FP01	A1242-0014	FILTER-LC,CHIP;LP TH355LSK-K5165 5M T	
ICP01	A4004-0187	IC-LOGIC;KS7301 VQFP	
ICP02	A4004-0873	IC-LOGIC;KDA0408 VQFP	
ICP03	B4004-0041	IC-LOGIC;TB6504F SOP	
ICP04	B4008-0983	IC;MB88346B VSOP	
ICP05	B4000-0053	IC-EEPROM;X24C01S-C7519 SOP	
ICP06	67199-0079-00	IC-FP;UPD78P214GC-AB8 OTP	
ICP07	62119-701-094	IC-FP;TC74HC132AF(EL)	
ICP08	B4004-0340	IC-LOGIC;TC7W04FU-TE12L SOP TAPE 8P	
LP01	B1160-0011	INDUCTOR,CHIP;10UH-K 73 NLC322522T-100K C3225	
LP03	B1160-0009	INDUCTOR,CHIP;22UH-K 73 NLC322522T-220K C3225	
LP04	B1160-0009	INDUCTOR,CHIP;22UH-K 73 NLC322522T-220K C3225	
LP05	B1160-0055	INDUCTOR,CHIP;68UH-J 73 NL252018T-680J C2520	
LP06	B1160-0011	INDUCTOR,CHIP;10UH-K 73 NLC322522T-100K C3225	
QP01	A4050-0104	TR-GENERAL,CHIP;2SA 1179	
QP02	62129-301-117	TRANSISTOR.CHIP;2SC 2812(REEL)L6-TA	
QP03	A4050-0104	TR-GENERAL,CHIP;2SA 1179	
QP04	62129-303-012	TRANSISTOR-CHIP;DTC144EU(T106)	
QP05	62129-303-011	TRANSISTOR-CHIP;DTA144EU(T106)	
QP06	62129-303-012	TRANSISTOR-CHIP;DTC144EU(T106)	
QP07	62129-301-117	TRANSISTOR.CHIP;2SC 2812(REEL)L6-TA	
QP08	62129-301-117	TRANSISTOR.CHIP;2SC 2812(REEL)L6-TA	
QP09	62129-301-117	TRANSISTOR.CHIP;2SC 2812(REEL)L6-TA	
QP10	62129-301-117	TRANSISTOR.CHIP;2SC 2812(REEL)L6-TA	
QP11	62129-301-117	TRANSISTOR.CHIP;2SC 2812(REEL)L6-TA	
QP12	62129-301-117	TRANSISTOR.CHIP;2SC 2812(REEL)L6-TA	
QP13	62129-301-117	TRANSISTOR.CHIP;2SC 2812(REEL)L6-TA	
QP14	62129-301-117	TRANSISTOR.CHIP;2SC 2812(REEL)L6-TA	
QP15	62129-301-117	TRANSISTOR.CHIP;2SC 2812(REEL)L6-TA	
QP16	62129-301-117	TRANSISTOR.CHIP;2SC 2812(REEL)L6-TA	
QP17	62129-301-117	TRANSISTOR.CHIP;2SC 2812(REEL)L6-TA	
RP01	61079-918-103	R-CHIP;RH C1608 CS 103-J	
RP02	61079-918-102	R-CHIP;RH C1608 CS 102-J	
RP03	61079-918-222	R-CHIP;RH C1608 CS 222-J	
RP04	61079-918-103	R-CHIP;RH C1608 CS 103-J	

Loca.No	Part No	Description & Specification	Remark
RP05	61079-918-473	R-CHIP;RH C1608 CS 473-J	
RP06	61079-918-473	R-CHIP;RH C1608 CS 473-J	
RP07	61079-918-104	R-CHIP;RH C1608 CS 104-J	
RP08	61079-918-104	R-CHIP;RH C1608 CS 104-J	
RP09	61079-918-104	R-CHIP;RH C1608 CS 104-J	
RP10	A1020-0569	R-CHIP;RH 1/10 CS 7R5-J C2012 RMC 1/10 7.5-J	
RP11	A1020-0569	R-CHIP;RH 1/10 CS 7R5-J C2012 RMC 1/10 7.5-J	
RP12	61079-918-103	R-CHIP;RH C1608 CS 103-J	
RP13	61079-918-103	R-CHIP;RH C1608 CS 103-J	
RP14	61079-918-102	R-CHIP;RH C1608 CS 102-J	
RP15	61079-918-153	R-CHIP;RH C1608 CS 153-J	
RP16	61079-918-682	R-CHIP;RH C1608 CS 682-J	
RP17	61079-918-104	R-CHIP;RH C1608 CS 104-J	
RP18	61079-918-104	R-CHIP;RH C1608 CS 104-J	
RP19	61079-918-104	R-CHIP;RH C1608 CS 104-J	
RP20	61079-918-102	R-CHIP;RH C1608 CS 102-J	
RP21	61079-918-102	R-CHIP;RH C1608 CS 102-J	
RP23	61079-918-102	R-CHIP;RH C1608 CS 102-J	
RP24	61079-918-102	R-CHIP;RH C1608 CS 102-J	
RP25	61079-918-102	R-CHIP;RH C1608 CS 102-J	
RP26	61079-918-104	R-CHIP;RH C1608 CS 104-J	
RP27	61079-918-102	R-CHIP;RH C1608 CS 102-J	
RP28	61079-918-102	R-CHIP;RH C1608 CS 102-J	
RP29	61079-918-332	R-CHIP;RH C1608 CS 332-J	
RP30	61079-918-333	R-CHIP;RH C1608 CS 333-J	
RP31	61079-918-333	R-CHIP;RH C1608 CS 333-J	
RP32	61079-918-102	R-CHIP;RH C1608 CS 102-J	
RP33	61079-918-242	R-CHIP;RH C1608 CS 242-J	
RP34	A1020-0617	R-CHIP;RH 1/16 CS 221-F C1608	
RP35	A1020-0591	R-CHIP;RH 1/16 CS 102-F C1608	
RP36	61079-918-333	R-CHIP;RH C1608 CS 333-J	
RP37	61079-918-153	R-CHIP;RH C1608 CS 153-J	
RP38	61079-918-472	R-CHIP;RH C1608 CS 472-J	
RP39	A1020-0641	R-CHIP;RH 1/16 CS 391-F C1608	
RP40	A1020-0650	R-CHIP;RH 1/16 CS 471-F C1608	
RP41	A1020-0650	R-CHIP;RH 1/16 CS 471-F C1608	
RP42	A1020-0603	R-CHIP;RH 1/16 CS 152-F C1608	
RP43	A1020-0607	R-CHIP;RH 1/16 CS 162-F C1608	
RP44	A1020-0454	R-CHIP;RH 1/16 CS 511-J C1608 RMC 1/16 510-J	
RP45	61079-918-750	R-CHIP;RH C1608 CS 750-J	
RP46	61079-918-102	R-CHIP;RH C1608 CS 102-J	
RP47	A1020-0627	R-CHIP;RH 1/16 CS 273-F C1608	
RP48	A1020-0618	R-CHIP;RH 1/16 CS 222-F C1608	
RP49	A1020-0591	R-CHIP;RH 1/16 CS 102-F C1608	
RP50	61079-918-472	R-CHIP;RH C1608 CS 472-J	
RP51	A1020-0641	R-CHIP;RH 1/16 CS 391-F C1608	
RP52	A1020-0650	R-CHIP;RH 1/16 CS 471-F C1608	
RP53	A1020-0591	R-CHIP;RH 1/16 CS 102-F C1608	
RP54	A1020-0607	R-CHIP;RH 1/16 CS 162-F C1608	
RP55	A1020-0618	R-CHIP;RH 1/16 CS 222-F C1608	
RP56	A1020-0454	R-CHIP;RH 1/16 CS 511-J C1608 RMC 1/16 510-J	
RP57	61079-918-242	R-CHIP;RH C1608 CS 242-J	
RP58	A1020-0591	R-CHIP;RH 1/16 CS 102-F C1608	
RP59	A1020-0597	R-CHIP;RH 1/16 CS 122-F C1608	
RP60	61079-918-472	R-CHIP;RH C1608 CS 472-J	
RP61	61079-918-104	R-CHIP;RH C1608 CS 104-J	
RP62	61079-918-101	R-CHIP;RH C1608 CS 101-J	
RP63	61079-918-101	R-CHIP;RH C1608 CS 101-J	
RP64	61079-917-100	R-CHIP;RH C2012 CS 100-J	
RP65	61079-917-100	R-CHIP;RH C2012 CS 100-J	
RP66	61079-918-000	R-CHIP;RH C1608 CS 000-J	
RP67	61079-918-472	R-CHIP;RH C1608 CS 472-J	
RP68	61079-918-682	R-CHIP;RH C1608 CS 682-J	
RP69	61079-918-101	R-CHIP;RH C1608 CS 101-J	
RP71	61079-918-101	R-CHIP;RH C1608 CS 101-J	
RP72	61079-918-101	R-CHIP;RH C1608 CS 101-J	

Loca.No	Part No	Description & Specification	Remark
RP73	61079-918-100	R-CHIP;RH C1608 CS 100-J	
RP74	61079-918-102	R-CHIP;RH C1608 CS 102-J	
RP89	61079-917-100	R-CHIP;RH C2012 CS 100-J	
RP91	61079-918-471	R-CHIP;RH C1608 CS 471-J	
RP92	61079-918-471	R-CHIP;RH C1608 CS 471-J	
RP93	61079-918-471	R-CHIP;RH C1608 CS 471-J	
RP94	61079-918-471	R-CHIP;RH C1608 CS 471-J	
RP95	61079-918-471	R-CHIP;RH C1608 CS 471-J	
RP96	61079-918-471	R-CHIP;RH C1608 CS 471-J	
RP97	61079-918-471	R-CHIP;RH C1608 CS 471-J	
RP98	61079-918-471	R-CHIP;RH C1608 CS 471-J	
RP99	61079-918-103	R-CHIP;RH C1608 CS 103-J	
XP01	B1280-0144	CRYSTAL;28.375MHZ CX-49F 30PPM CHIP TAPING	
XP02	B1280-0111	CRYSTAL;12MHZ CX-49F 100PPM CHIP	
XP03	B1280-0110	CRYSTAL;17.734476MHZ CX-49F 100PPM CHIP	
177	**69063-214-223**	**ASSY EVF BOARD;VP-U12 PAL**	
CE01	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
CE02	A1106-0155	C-TANTALUM,CHIP;SCS0J 476MR-C(6.3V/47U)	
CE03	61454-155-223	C-CERAMIC CHIP;C1608 JB1C 223KT	
CE04	A1106-0051	C-TANTALUM,CHIP;CS 6.3V T 225-M C3216 SCN0J 225MR	
CE05	B1102-0156	C-FILM,CHIP;CQS 162 M 16V T 104-J ECWU1C104JA5	
CE07	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
CE08	61454-159-104	C-CERAMIC CHIP;C1608 F1E 104T-Z	
CE09	A1106-0028	C-TANTALUM,CHIP;CS 20V T 475-M C3528 SCS1D 475MR-B	
CE10	A1106-0127	C-TANTALUM,CHIP;CS 6.3V T 107-M C7343	
CE11	A1106-0127	C-TANTALUM,CHIP;CS 6.3V T 107-M C7343	
CE12	61507-121-251	C-POLYESTER;CQ921M TAPG 50V 272-J	
CE13	A1106-0018	C-TANTALUM,CHIP;CS 10V T 476-M C7343 SCS1A 476MR-D	
CE14	61407-100-331	C-CERAMIC;EK B 3A 331K 06 BS	
CE15	61454-246-293	C-ELEC.CHIP;ECE-V1HA3R3R	
CE16	61407-100-151	C-CERAMIC;EK B 3A 151K 06 BS	
CE17	61454-153-820	C-CERAMIC CHIP;C1608 CH1H820JT	
CE18	B1100-0630	C-CERAMIC,CHIP;GRM40 Y5V 105Z 16	
CE19	61453-131-105	C-CERAMIC.CHIP;GRM42-6Y5V105Z16 TAPG	
CNE01	B6010-0871	CONNECTOR-WAFER;53398-0590 WHT	
CNE02	A3047-0005	SOCKET-CRT;SOCKET FINDER PI10 50MM	
CNE03	63349-900-009	CONNECTOR;CGP1602-0101	
CNE04	63349-900-009	CONNECTOR;CGP1602-0101	
DE01	62169-901-043	DIODE.CHIP;MA151K-(TX)	
DE02	B4100-0033	DIODE-SW,CHIP;MA158-TX 200V 10NS T	
FBT01	62139-602-012	FBT;ECX-C2806A	
ICE01	62119-121-049	IC-FP;AN2512S-(E2)	
LE01	B1160-0036	INDUCTOR-CHIP;NL322522T 121-J	
LE02	B1160-0011	INDUCTOR,CHIP;10UH-K 73 NLC322522T-100K C3225	
LE03	62429-014-304	COIL-LINEARITY;ELH-5L218	
LED01	62309-110-340	LED;GL-3HD7/GL3HD8	
QE01	62129-301-172	TRANSISTOR.CHIP;2SD 968A-R/S(TX)	
QE02	A4050-0104	TR-GENERAL,CHIP;2SA 1179	
QE03	A4050-0104	TR-GENERAL,CHIP;2SA 1179	
RE01	61079-918-105	R-CHIP;RH C1608 CS 105-J	
RE02	61079-917-338	R-CHIP;RH C2012 CS 330-J	
RE03	61079-918-152	R-CHIP;RH C1608 CS 152-J	
RE04	61079-918-474	R-CHIP;RH C1608 CS 474-J	
RE05	61079-918-823	R-CHIP;RH C1608 CS 823-J	
RE06	61079-918-393	R-CHIP;RH C1608 CS 393-J	
RE07	61079-918-399	R-CHIP;RH C1608 CS 3R9-J	
RE08	61079-918-101	R-CHIP;RH C1608 CS 101-J	
RE09	61079-918-182	R-CHIP;RH C1608 CS 182-J	
RE10	61079-918-681	R-CHIP;RH C1608 CS 681-J	
RE11	61079-918-221	R-CHIP;RH C1608 CS 221-J	
RE12	61079-918-751	R-CHIP;RH C1608 CS 751-J	
RE13	61079-918-122	R-CHIP;RH C1608 CS 122-J	
RE14	61079-918-102	R-CHIP;RH C1608 CS 102-J	
RE15	61079-918-684	R-CHIP;RH C1608 CS 684-J	
RE16	61079-918-623	R-CHIP;RH C1608 CS 623-J	
RE17	61079-918-103	R-CHIP;RH C1608 CS 103-J	

Loca.No	Part No	Description & Specification	Remark
RE18	61079-918-182	R-CHIP;RH C1608 CS 182-J	
RE19	61079-918-391	R-CHIP;RH C1608 CS 391-J	
RE20	61079-918-124	R-CHIP;RH C1608 CS 124-J	
RE21	61079-918-474	R-CHIP;RH C1608 CS 474-J	
RE22	61079-918-105	R-CHIP;RH C1608 CS 105-J	
RE23	61079-917-000	R-CHIP;RH C2012 CS 000-J	
RE24	61079-917-104	R-CHIP;RH C2012 CS 104-J	
RE25	61079-917-225	R-CHIP;RH C2012 CS 225-J	
RE26	61079-917-155	R-CHIP;RH C2012 CS 155-J	
RE27	61079-918-150	R-CHIP;RH C1608 CS 150-J	
RE28	61079-918-222	R-CHIP;RH C1608 CS 222-J	
RTE01	B1335-0002	THERMISTOR-CHIP;NTC CS 3216 3BH 471KC 470OHM/20DEG	
VRE01	B1056-0051	VR-SEMI CHIP;EVM1SSX50B54 50KB CERMET	
VRE02	B1056-0052	VR-SEMI CHIP;EVM1SSX50B52 500B CERMET	
VRE03	B1056-0064	VR-SEMI CHIP;RVG4M58-205M-TG 2MB CERMET T TOP 1/4W	
VRE04	B1056-0062	VR-SEMI CHIP;EVM1DSX30B16 1MB CERMET	
VRE05	B1056-0062	VR-SEMI CHIP;EVM1DSX30B16 1MB CERMET	
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* ACCESSORIES

Loca.No	Part No	Description & Specification	Remark
	A7008-0039	ADAPTER;AC90/264V 60HZ DC7.5V 1.5A FTZ/DEMCO CP2	
	A6006-0086	POWER-CORD;AP2 KKJ1004A/KJ0201 1.8MT BLK SOLDRING	
		ASSY MAIN BOARD;AA-E1P/PAL	
B101	62429-014-337	CHIP-FERRITE BEAD;HF50ACB322513-T	
B102	62429-014-337	CHIP-FERRITE BEAD;HF50ACB322513-T	
C101	B1102-0190	C-FILM;ECQ-U2A 224MV	
C102	A1100-0450	C-CERAMIC;CK 45 B 400V 222-M CK45B500V222K	
C103	A1100-0450	C-CERAMIC;CK 45 B 400V 222-M CK45B500V222K	
C104	A1100-0450	C-CERAMIC;CK 45 B 400V 222-M CK45B500V222K	
C105	A1100-0450	C-CERAMIC;CK 45 B 400V 222-M CK45B500V222K	
C106	B1104-0456	C-ELEC;CE 04 W 400V 470-K ECA2GV 470Y	
C107	A1102-0120	C-FILM;TM2JRB 103K	
C108	61637-206-330	C-ELEC;CEAP 35V 33M SA(6X11)	
C109	61637-508-101	C-ELEC-CEAP 50V 100M SG(10X12.5)	
C110	61509-144-520	C-POLYESTER;ECQ-VIH104JZ3/24538104D	
C111	61637-208-229	C-ELEC;CEAP 50V 2.2M SA (5X11)	
C112	B1102-0193	C-FILM;CQ 922 M 50V T 391-J ECQ-B1H 391J F3	
C113	61509-121-560	C-POLYESTER;CQ92IM 50V 124-K	
C114	61507-121-341	C-POLYESTER;CQ921M TAPG 50V 102-J	
C150	61509-121-470	C-POLYESTER;CQ921M 50V 103-K	
C151	61507-121-341	C-POLYESTER;CQ921M TAPG 50V 102-J	
C152	61507-121-341	C-POLYESTER;CQ921M TAPG 50V 102-J	
C153	61637-504-102	C-ELEC;CEAP 16V 1000M SG(10X20)	
C154	A1104-0480	C-ELEC;CE 04 F 16V T 471-M STX/KME -40/105	
C155	61637-208-229	C-ELEC;CEAP 50V 2.2M SA (5X11)	
C156	61509-144-520	C-POLYESTER;ECQ-VIH104JZ3/24538104D	
C157	61647-708-010	C-ELEC;CEAP 50V 1M SS(2.5)	
CN151	B6010-0337	CONNECTOR WAFER;B8P-MQ WHT 8P	
D101	B4104-0041	DIODE-RECT;S1WBA60 600V 1A	
D102	B4112-0006	DIODE-SCHOTTKY;ERA22-10(1KV 0.5A)	
D103	B4106-0049	DIODE-ZENER;MTZ-20B	
D104	B4112-0006	DIODE-SCHOTTKY;ERA22-10(1KV 0.5A)	
D105	B4112-0006	DIODE-SCHOTTKY;ERA22-10(1KV 0.5A)	
D106	62169-406-482	DIODE;1N4148 SAMSUNG	
D107	A4106-0006	ZENER DIODE;MTZ 4.7B	
D108	62169-403-836	DIODE ZENER;UZ 24BH	
D151	B4112-0002	DIODE-SCHOTTKY;ESAC85M-009(90V 10A)	
D152	62169-501-064	DIODE;1N5819(ERB 81-004)V	
D153	62169-403-821	DIODE-ZENER;MTZ 5.1B	
D154	62169-406-482	DIODE;1N4148 SAMSUNG	
D155	62169-406-482	DIODE;1N4148 SAMSUNG	
F101	A3065-0154	FUSE;T1.25A 250V 51S 5X20MM SJ DOM	
F151	B3065-0114	FUSE-MICRO;FST 125V 2A 7.49MM L TR/MCR-2.0BUSS	
IC101	B4008-1002	IC;FA5304 DIP	
IC102	B4010-0011	IC;PC113(L) DIP	
IC151	62109-103-330	IC;LM358N	
L101	A1151-0001	COIL-LINE FILTER;BSF-2123 20MH 10OHM	
L151	A1132-0008	COIL-PEAKING;10UH-J RA EL0606RA-100J Q80 F22MHZ	
Q101	B4054-0018	FET;2SK904	
Q151	B4052-0027	TR;2SB1127S	
Q152	A4056-0019	TR-SWITCHING;2SD1207T 1W 150MHZ SI/NPN T	
Q153	B4060-0021	TR;DTC114ES	
Q154	B4060-0021	TR;DTC114ES	
R101	61028-328-275	R-COMPOSITION;RC 1/2 P 275-K/ERC12GK275	
R102	B1012-0014	R-WIRE;RW 2 P3R3-K	
R103	61048-177-823	R-CARBON;RD 1/8 T 823-J	
R104	61048-177-823	R-CARBON;RD 1/8 T 823-J	
R105	61048-177-823	R-CARBON;RD 1/8 T 823-J	
R106	61049-527-473	R-METAL OXIDE;RS 2 P 473-J	
R107	A1010-0004	R-FUSIBLE;RF 1/2 P 010-J	
R108	61048-177-221	R-CARBON;RD 1/8 T 221-J	
R109	A1004-0220	R-METAL OXIDE;RS 1 P R47-J	
R110	61048-177-330	R-CARBON;RD 1/8 T 330-J	
R111	61048-177-330	R-CARBON;RD 1/8 T 330-J	

Loca.No	Part No	Description & Specification	Remark
R112	61048-177-155	R-CARBON;RD 1/8 T 155-J	
R113	61048-177-822	R-CARBON;RD 1/8 T 822-J	
R114	61048-177-823	R-CARBON;RD 1/8 T 823-J	
R150	61048-177-272	R-CARBON;RD 1/8 T 272-J	
R151	61048-277-100	R-CARBON;RD 1/4 T 100-J	
R152	61048-177-681	R-CARBON;RD 1/8 T 681-J	
R153	61048-177-272	R-CARBON;RD 1/8 T 272-J	
R154	61048-177-911	R-CARBON;RD 1/8 T 911-J	
R155	61048-177-222	R-CARBON;RD 1/8 T 222-J	
R156	61048-177-104	R-CARBON;RD 1/8 T 104-J	
R157	61048-177-472	R-CARBON;RD 1/8 T 472-J	
R158	61048-177-472	R-CARBON;RD 1/8 T 472-J	
R159	61048-177-100	R-CARBON;RD 1/8 T 100-J	
R160	A1004-0221	R-METAL OXIDE;RS 1 P 0R1-J	
R161	61048-177-221	R-CARBON;RD 1/8 T 221-J	
R162	61048-177-123	R-CARBON;RD 1/8 T 123-J	
R163	61048-177-911	R-CARBON;RD 1/8 T 911-J	
R164	61048-177-104	R-CARBON;RD 1/8 T 104-J	
R165	61048-177-621	R-CARBON;RD 1/8 T 621-J	
R166	A1010-0012	R-FUSIBLE;RF 1/2 P 4R7-J	
R167	61049-327-101	R-METAL OXIDE;RS 1 P 101-J	
R168	61048-177-103	R-CARBON;RD 1/8 T 103-J	
R169	61048-277-151	R-CARBON;RD 1/4 T 151-J	
R170	61048-177-103	R-CARBON;RD 1/8 T 103-J	
T101	A1199-0020	TRANS-POWER;EI25X19 AC90/260V 50HZ AC5.1V	
VR151	B1054-0138	VR-SEMI;KVSF637A-1/2W 1KB CARBON	
VR152	B1054-0139	VR-SEMI;KVSF637A-1/2W 5KB CARBON	
45	69063-213-943	ASSY SUB 1 BOARD;AA-E1 NTSC/PAL	
C158	A1100-0005	C-CERAMIC,CHIP;CK 73 Z5U 50V T 563-M C2012 21F-563	
C159	61647-702-470	C-ELEC;CEAP 6.3V 47M SS(2.5)	
C160	61454-143-473	C-CERAMIC.CHIP;0805 5E 473ZAT MA	
C161	A1100-0011	C-CERAMIC,CHIP;CK 73 X7R 50V T 103-K C2012 21B103K	
C162	61647-708-010	C-ELEC;CEAP 50V 1M SS(2.5)	
C163	61453-131-105	C-CERAMIC.CHIP;GRM42-6Y5V105Z16 TAPG	
CN152	B6010-0338	CONNECTOR WAFER;08MQ-ST WHT 8P	
D156	B4150-0044	LED;SLB25MG	
D157	B4106-0050	DIODE-ZENER;MTZ-15B	
D158	B4106-0050	DIODE-ZENER;MTZ-15B	
D159	62169-901-042	DIODE.CHIP;DAN202K	
D160	B4150-0045	LED;SLB25YY	
D161	62169-901-042	DIODE.CHIP;DAN202K	
D162	62169-901-042	DIODE.CHIP;DAN202K	
IC152	62109-201-410	IC;KA78L05(T)	
IC153	62109-201-314	IC;MB88211PF-166	
J151	63335-501-007	DC-JACK;HEC 0738-010010	
L152	A1130-0020	COIL-CHOKE;100UH-J RA 1KHZ PI0.35	
Q155	B4060-0021	TR;DTC114ES	
Q156	62129-101-140	TRANSISTOR.CHIP;KSR 2104(REEL)	
Q157	62129-101-110	TRANSISTOR.CHIP;KSR 1102 (REEL)	
R171	61079-917-391	R-CHIP;RH C2012 CS 391-J	
R172	61079-917-472	R-CHIP;RH C2012 CS 472-J	
R173	61079-917-103	R-CHIP;RH C2012 CS 103-J	
R174	61079-917-223	R-CHIP;RH C2012 CS 223-J	
R175	61079-917-102	R-CHIP;RH C2012 CS 102-J	
R176	61079-917-391	R-CHIP;RH C2012 CS 391-J	
R177	61079-917-561	R-CHIP;RH C2012 CS 561-J	
R178	61079-917-273	R-CHIP;RH C2012 CS 273-J	
R179	61079-917-183	R-CHIP;RH C2012 CS 183-J	
R180	61079-917-243	R-CHIP;RH C2012 CS 243-J	
R181	61079-917-561	R-CHIP;RH C2012 CS 561-J	
R182	61079-917-821	R-CHIP;RH C2012 CS 821-J	
SW151	B3020-0008	SW-MICRO;D2A-1210	
X151	B1283-0013	RESONATOR-CERAMIC;4.0MHZ FCR4.0MCTB 3/CN D	
	69063-213-890	ASSY LIGHT;VL-E5(VP-E808)	
	B4158-0017	LAMP;JC6V-5W 100HRS G4	

NO / ITEM / BUYER	1 A/V CABLE	2 8 mm VIDEO CASSETTE	3 LITHIUM BATTERY PACK	4 CABLE DC	5 UNIT REMOCON	6 BATTERY PACK	7 SHOULDER STRAP	8 LIGHT (VL-E5)	9 JACK SCART	10 ADAPTER
AMF	63054-402-040	63174-600-030	64539-502-105	66449-0029-00	67173-0182-04	67223-0015-02	67853-600-270	69063-213-890	A3040-0153	A7008-0039
DIN	63054-402-040	63174-600-030	64539-502-105	66449-0029-00	67173-0182-04	67223-0015-02	67853-600-270	-	A3040-0153	A7008-0048
EDI	63054-402-040	63174-600-030	64539-502-105	66449-0029-00	67173-0182-04	67223-0015-02	67853-600-270	-	A3040-0153	A7008-0039
ELE	63054-402-040	63174-600-030	64539-502-105	66449-0029-00	67173-0182-04	67223-0015-02	67853-600-270	-	A3040-0153	A7008-0039
ERG	63054-402-040	63174-600-030	64539-502-105	66449-0029-00	67173-0182-04	67223-0015-02	67853-600-270	-	A3040-0153	A7008-0039
ETR	63054-402-040	63174-600-030	64539-502-105	66449-0029-00	67173-0182-04	67223-0015-02	67853-600-270	-	A3040-0153	A7008-0039
NSI	63054-402-040	63174-600-030	64539-502-105	66449-0029-00	67173-0182-04	67223-0015-02	67853-600-270	69063-213-890	A3040-0153	A7008-0039
RIE	63054-402-040	63174-600-030	64539-502-105	66449-0029-00	67173-0182-04	67223-0015-02	67853-600-270	-	A3040-0153	A7008-0039
SECO	63054-402-040	63174-600-030	64539-502-105	66449-0029-00	67173-0182-04	67223-0015-02	67853-600-270	-	A3040-0153	A7008-0039
SEF	63054-402-040	63174-600-030	64539-502-105	66449-0029-00	67173-0182-04	67223-0015-02	67853-600-270	69063-213-890	A3040-0153	A7008-0048
SEG	63054-402-040	63174-600-030	64539-502-105	66449-0029-00	67173-0182-04	67223-0015-02	67853-600-270	69063-213-890	A3040-0153	A7008-0039
SEH	63054-402-040	63174-600-030	64539-502-105	66449-0029-00	67173-0182-04	67223-0015-02	67853-600-270	-	A3040-0153	A7008-0039
SEI	63054-402-040	63174-600-030	64539-502-105	66449-0029-00	67173-0182-04	67223-0015-02	67853-600-270	-	A3040-0153	A7008-0039
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SES	63054-402-040	63174-600-030	64539-502-105	66449-0029-00	67173-0182-04	67223-0015-02	67853-600-270	-	A3040-0153	A7008-0039
SEUK	63054-402-040	63174-600-030	64539-502-105	66449-0029-00	67173-0182-04	67223-0015-02	67853-600-270	-	A3040-0153	A7008-0045

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	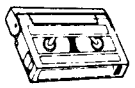	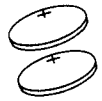	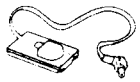	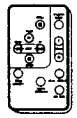	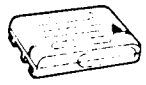		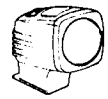	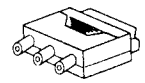	

9. EXPLODED VIEW / PARTS LIST

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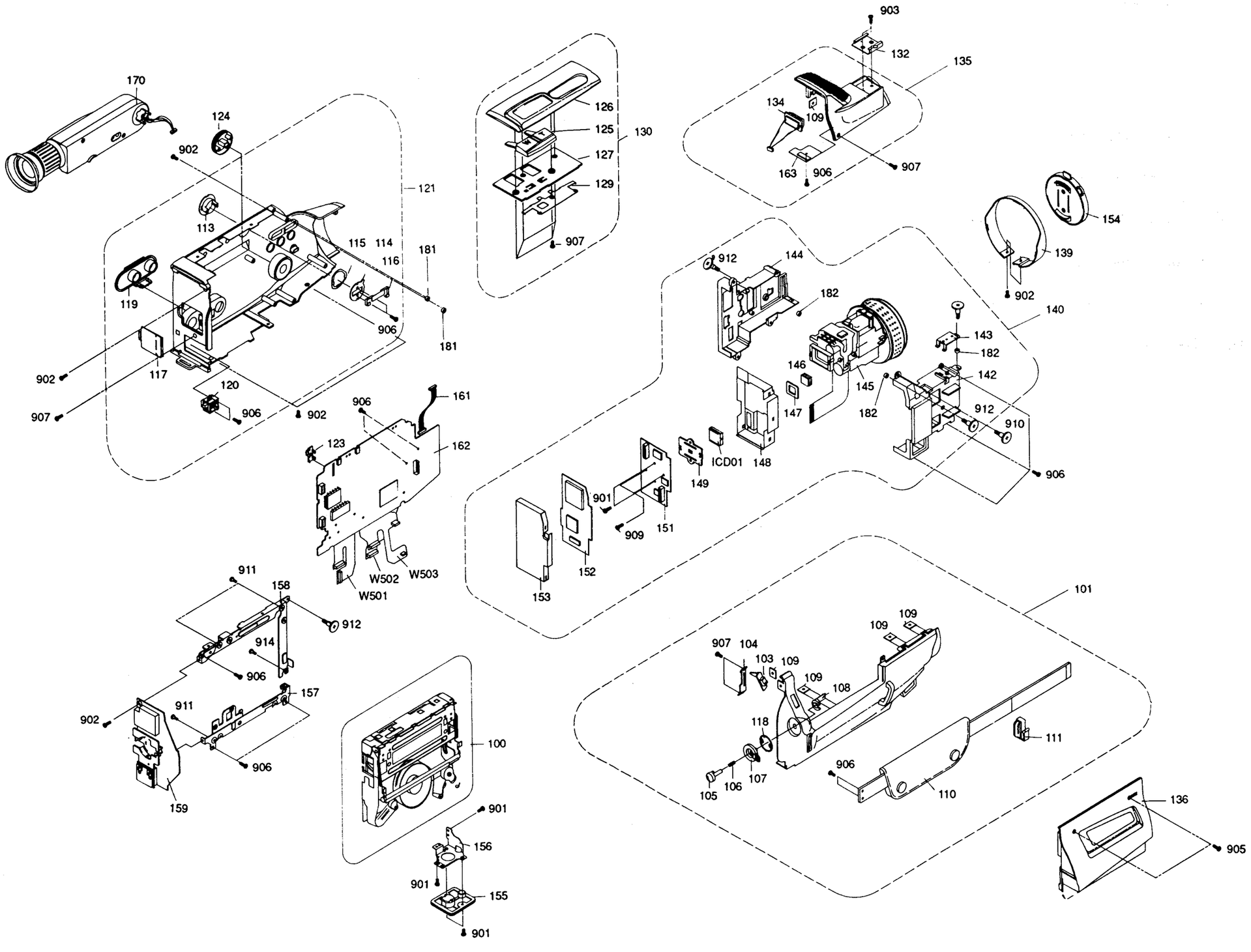
9-1. INSTRUMENT ASSEMBLY

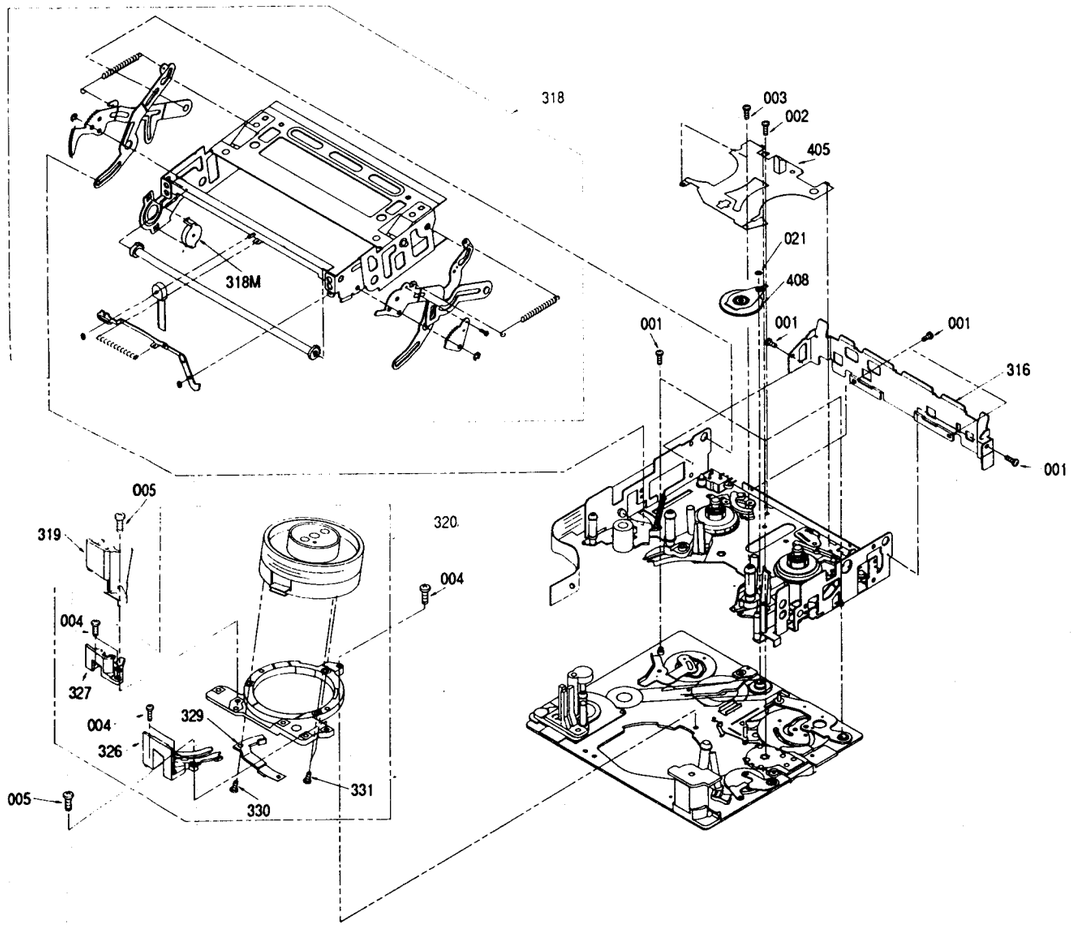


9-2

Loca.No	Part No	Description & Specification	Remark
100	DE-4UP	ASSY-COMPACT DECK;8MM PI40 3H'D PAL	
101	69063-214-466	ASSY-CASE RIGHT;VP-U12/SEG	
103	64084-0378-00	KNOB-TAPE EJECT;ABS94HB BLK VN-U12	
104	63014-0192-00	BRACKET-TAPE EJECT;SECC T0.8 NTR VN-U12	
105	64084-0380-00	BUTTON-REC START/STOP;ABS94HB RED VN-U12	
106	62724-0093-00	SPRING-BUTTON;STS304 PI0.2 D3 VN-E405	
107	64084-0458-00	KNOB-REC START/STOP;ABS94HB BLK VN-U12	
108	63323-0239-00	HOLDER-REC START/STOP;POM BLK (VN-U12)	
109	66604-640-710	HOLDER-LOCK;SECC T=1.0	
110	67173-0178-01	UNIT-BELT GRIP;LEATHER+PS VN-U12/SEA	
111	63424-0001-00	FASTENER-HAND GRIP;ABS94HB BLK T1.0 (VN-U12)	
113	61644-0020-00	SLIDER-RING ROTATE EVF;POM T1 BLK(VN-E405)	
114	63014-0183-00	BRACKET-EVF;STS304 T0.8 (VN-U12)	
115	62724-0183-00	SPRING-EVF;PS STS301 T0.4 OD26 (VN-U10)	
116	63014-0198-00	BRACKET-SUPPORT EVF;STS-304H T0.3 (VN-U12)	
117	63314-0123-00	COVER-LI BATTERY;PP T1.5 BLK VN-U12	
118	62724-0181-00	SPRING-PLATE START/STOP;PS STS301 T0.2 OD16 (VN-U1	
119	64044-0135-00	DOOR-A/V JACK;PP T1.5 BLK VN-U12	
120	67173-0176-00	UNIT-BATTERY EJECT;VN-U12	
121	69063-214-467	ASSY-CASE LEFT;VP-U12/SEG	
	69063-214-536	ASSY-CASE LEFT;VP-U12/SEF	
	69063-214-537	ASSY-CASE LEFT;VP-U12/SEUK/SECO/SEH/SEI/SEP/SES/AMF/NSI/EDI/RIE/ERG/ELE/DIN/ETR	
123	64084-0385-00	KNOB-DATE/SELECT;ABS94HB BLK VN-U12	
124	64083-0387-00	KNOB-ROTARY;ABS94HB BLK VN-U12	
125	64083-0381-00	BUTTON-T/W;ABS94HB BLK VN-U12	
126	62032-0146-00	CASE-TOP;ABS94HB T1.5 BLK (VN-U12)	
127	63073-0028-00	SUPPORTER-CASE TOP;POM T1.0 (VN-U12)	
129	61554-0009-00	LINK-CASE TOP;STS304 T0.3 L66 (VN-U12)	
130	69063-214-286	ASSY-CASE TOP;VN-U12	
132	63014-0145-00	BRACKET-ACCESSORY SHOE;SBHG T0.8 BLK	
133	63014-0188-00	BRACKET-MIC;SECC T0.6 (VN-U12)	
134	69063-214-399	ASSY MIC;VN-U12 MIC ASSY	
135	69063-214-469	ASSY-CASE FRONT;VP-U12/SEG	
136	69063-214-468	ASSY-COVER HOUSING;VP-U12/SEG	
139	60574-0014-00	RING-HOOD;ABS94HB ID57 OD58 BLK T1 (VN-U12)	
140	CE-VP-U12	ASSY CAMERA;S8C-PAL(VP-U12 CAMERA)	
142	62212-0070-00	FRAME-LENS(R);ABS94HB T1.5 BLK (VN-U12)	
143	63014-0190-00	BRACKET-SUPPORT HOT SHOE;SECC T0.5 (VN-U12)	
144	62212-0071-00	FRAME-LENS(L);ABS94HB T1.5 BLK (VN-U12)	
145	62719-0039-00	LENS-ZOOM;I54G D27	
146	B1240-0046	FILTER-LC;LP 2M SV-511B(OLPF)	
147	63304-0016-00	SPACER-CCD;IIR D1.5 W12.5 L14 BLK	
148	62073-0184-00	SHIELD-CASE CCD;SPTE T0.25 NAT VN-U12	
149	63014-0191-00	BRACKET-CCD;SECC T1.2 (VN-U12)	
151	69063-214-189	ASSY CAM CCD BOARD;VP-U12 PAL	
152	69063-214-190	ASSY CAM PROCESS BOARD;VP-U12 PAL	
153	62073-0185-00	SHIELD-CASE PROCESSOR;SPTE T0.25 NAT VN-U12	
154	69063-214-300	ASSY CAP-HOOD;VN-U12	
155	63323-0064-00	HOLDER-TRIOD;ABS94HB+SUS T1.5 VN-E405	
156	63013-0187-00	BRACKET-DECK(BOT);SECC T0.6 (VN-U12)	
157	63013-0212-00	BRACKET-DECK(B);STS3040CSP T0.5 VP-J52	
158	63013-0184-00	BRACKET-DECK(A);SECC T0.8 (VN-U12)	
159	69063-214-186	ASSY DC/DC BOARD;S8C-PAL VP-U12 VTR(DC/DC)	
161	67179-0148-00	UNIT-BATTERY TERMINAL;VN-U12	
162	69063-214-185	ASSY MAIN BOARD;S8C-PAL VP-U12 VTR(SS,VID,AUD,FUN)	
163	69063-214-187	ASSY HOT SHOE BOARD;S8C-PAL VN-U12/BASIC	
170	*EE-U12-EXP	ASSY EVF;S8C-PAL(VP-U12 EVF)	
181	63394-0069-00	RUBBER-CASE;IIR VN-U12	
182	63394-0065-00	RUBBER-CUSHION;IIR VN-U12	
901	67094-120-230	SCREW-BH;M2X3 FE FZB	
902	67094-120-240	SCREW-BH;M2X4 FE FZB	
903	67018-120-047	SCREW FH;3+M2X5 FE FZB	
905	60504-0113-00	SCREW-MACHINE;BH B 1.7X5.5 FE BLK	
906	67128-520-206	SCREW-TAP TITE PLAIN;B+2X6 FE FZB	
908	67128-520-206	SCREW-TAP TITE PLAIN;B+2X6 FE FZB	

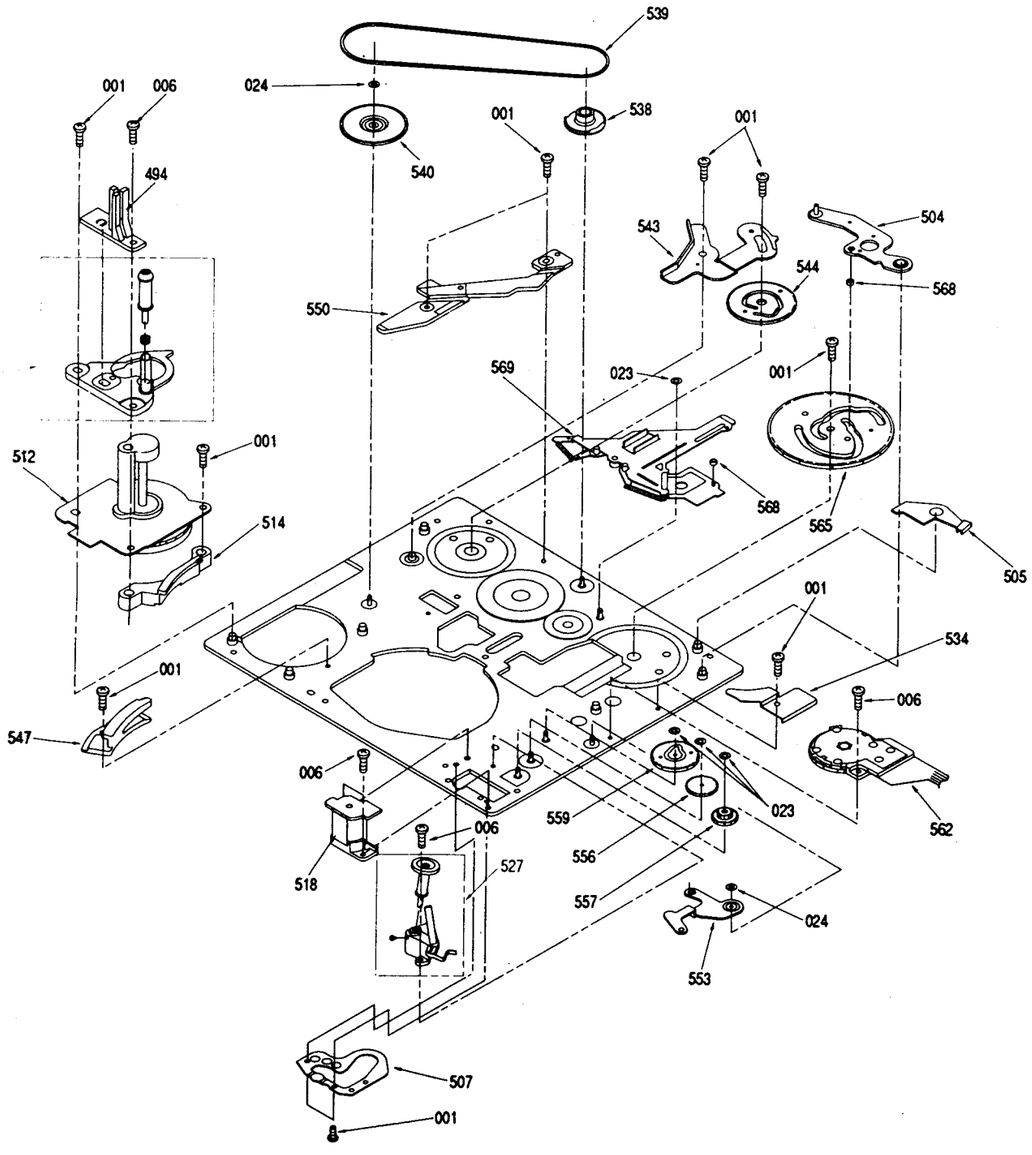
Loca.No	Part No	Description & Specification	Remark
907	67128-522-240	SCREW-TAP TITE BH;2X4 FE FZB	
909	A0102-0026	SCREW-TAP TITE;BH M1.7 5 SWRCH10A ZPC2 BLK TB	
910	60504-0093-01	SCREW-TAP TITE;BH + B M2 L8.5 SWRCH18A BLK SPC2	
911	60504-0117-00	SCREW;BH M1.4X3.5	
912	60504-0105-00	SCREW-TAP TITE;BH M1.7X5.8 SWRCH 10A ZP4 BLK	
914	60504-0117-01	SCREW;BH M1.4X5	
ICD01	B4014-0053	IC-CCD;ICX055-AK DIP	
W501	69063-214-296	ASSY FPC;C/M SEN(VN-U12) 28P	
W502	69063-214-297	ASSY FPC;L/M D/M M/SW(VN-U12) 16P	
W503	69063-214-298	ASSY FPC;P/AMP(VN-U12) 11P	

9-2. MECHANICAL PARTS (1)



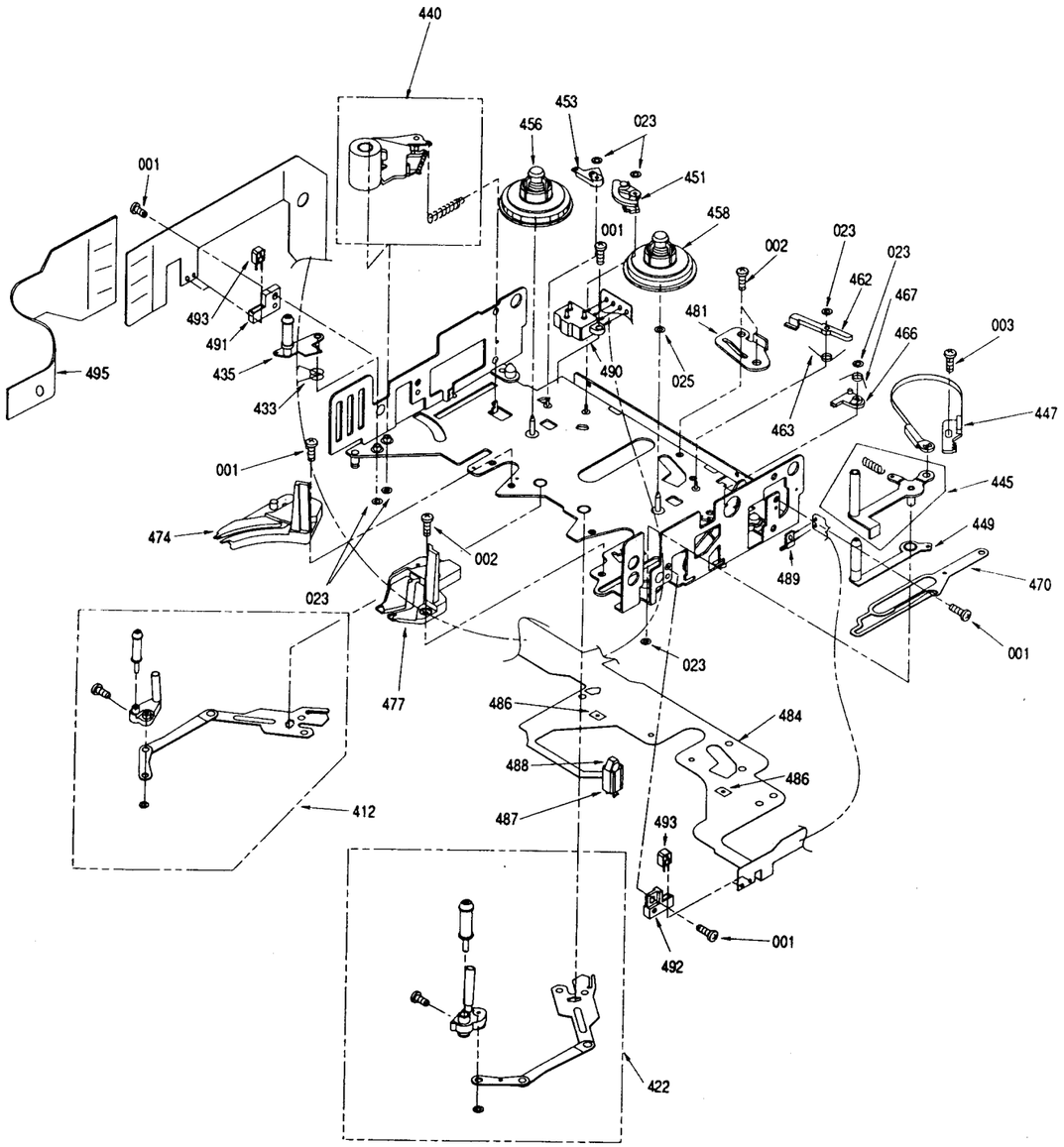
Loca.No	Part No	Description & Specification	Remark
001	60504-0005-00	SCREW-BH;BH + M1.4 L2 WHT	
002	60504-0015-00	SCREW;BH + FP M1.4 L1.2 S45C-HC BLK	
003	60504-0017-00	SCREW;BH + FP M1.4 L2.2 S45C-HC BLK	
004	60504-0038-00	SCREW-MACHINE;BH B M1.7 L5 FE WHT	
005	60504-0039-00	SCREW-MACHINE;BH B M1.7 L8 FE WHT	
021	60534-0005-00	WASHER-SLIT;ID0.75 OD2.0 T0.2 POLYSLIDER	
316	63312-0011-01	COVER-BACK;A5052P 314H	
318	62051-0012-00	HOUSING-ASS'Y;STS304/STS303 T0.5 DE-4	
318M	62663-0014-00	DAMPER-HOUSING;SUS/POM/NYLON 30G DE-2A	
319	63353-0057-00	GUIDE-TAPE T;DURACON M90-02 NTR	
320	69063-214-360	ASSY-DRUM;DE-4UPN-SS	
326	63081-0011-00	RAIL-STOPPER L;ZDC12	
327	63082-0012-00	RAIL-STOPPER R;ZDC12	
329	66534-0006-00	CONTACT-EARTH BRUSH ASS'Y;SECC/PBSP/CR/C DE-4	
330	60509-0065-00	SCREW-MACHINE;BH UP M2 L7 SWRCH10A WHT WL	
331	67094-604-410	SCREW-BH;1+M2X5 FE FZY,WL	
405	63312-0005-00	COVER-REEL ASSY;SUS304-CSP T0.2+DURACON M90-02 BLK	
408	61603-0005-00	IDLER(ASSY);DE-4A	

9-3. MECHANICAL PARTS (2)



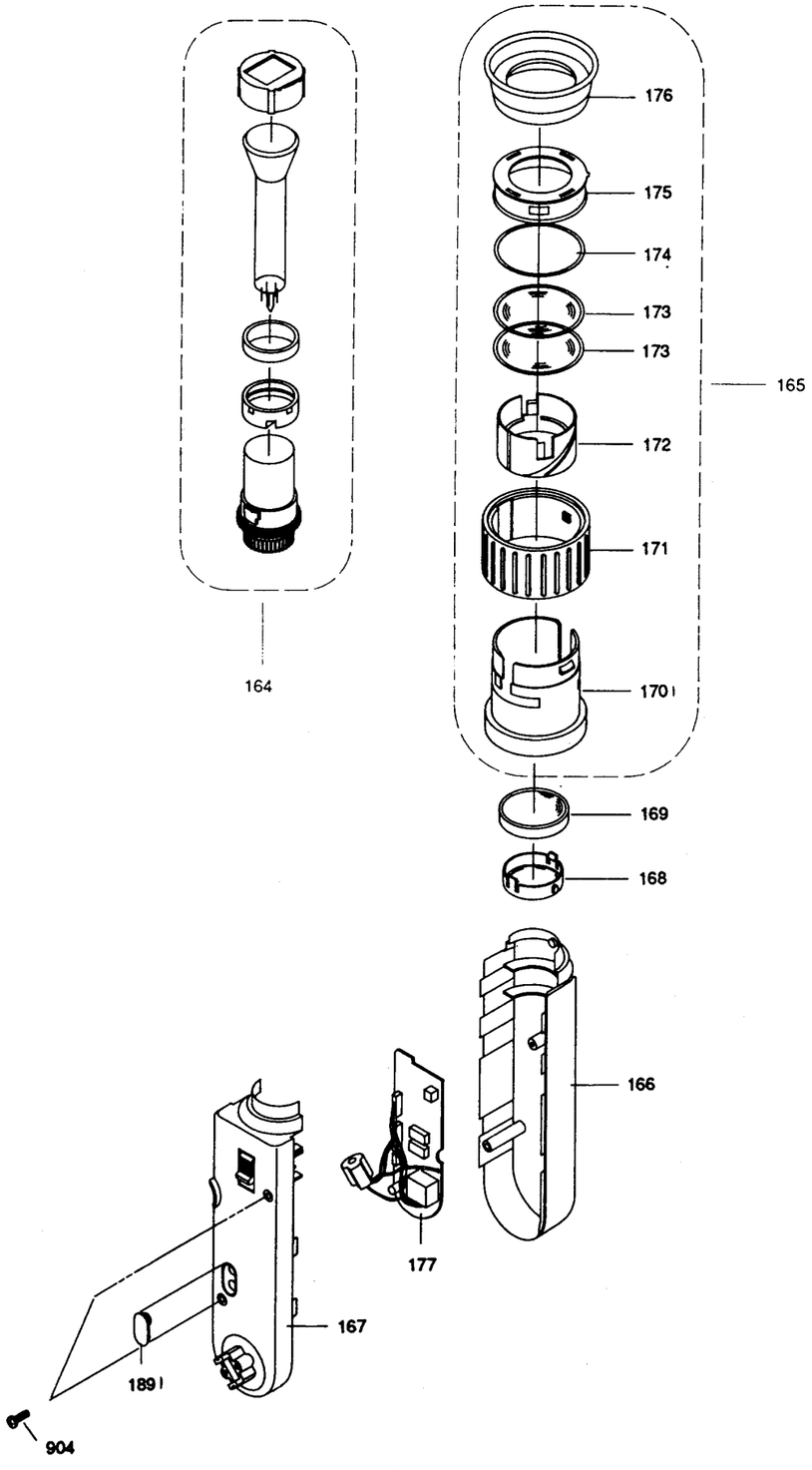
Loca.No	Part No	Description & Specification	Remark
001	60504-0005-00	SCREW-BH;BH + M1.4 L2 WHT	
006	60504-0016-00	SCREW;PH + FP M1.4 L3.5 S45C-HC BLK	
023	60534-0006-00	WASHER-SLIT;PI0.95 OD2.5 T0.25	
024	60534-0003-00	WASHER-SLIT;PI0.75 OD2.5 T0.2 POLYSLIDER	
494	63324-0246-00	HOLDER-FPC;PBT #3300	
504	61533-0058-00	LEVER-CAM ASS'Y;DE-4	
505	61534-0006-00	LEVER-EJECTOR;SUS304-CSP T0.3	
507	63013-0207-00	BRACKET-LOADING;SUS304-CP T0.3	
511	62202-0063-00	BASE-CAPSTAN ASS'Y;STS303/CS/STS304/WPB DE-4	
512	66823-0047-00	MOTOR-CAPSTAN;DE-4U	
514	63083-0014-00	RAIL-MIDDLE R;DURACON M90-02 NAT	
518	66823-0055-00	MOTOR-LOADING(ASSY);DE-4U	
527	63033-0028-00	POLE-BASE SUB IMP(ASSY);SUS+ZDC-2 NAT DE-4	
534	63354-0029-00	GUIDE-MODE SW;SUS304-CSP T0.3	
538	61473-0012-00	GEAR-PULLEY ASSY;DE-3	
539	61493-0006-00	BELT-TIMMING;L137 T0.4 POLYURETHAN	
540	61473-0010-00	GEAR-CAPSTAN ASSY;PA-SBK 1218	
543	61533-0051-00	LEVER-CAM P ASS'Y;DE-4	
544	61473-0009-01	GEAR-CAM PINCH;SUS304-CSP T0.8	
547	63083-0013-00	RAIL-MIDDLE L;DURACON M90-02 NAT	
550	63313-0030-00	COVER-TIME BELT;DURACON M90-02 NAT	
553	61534-0056-00	LEVER-CAM TENS ASS'Y;DE-4	
556	61474-0004-00	GEAR-LOADING B;BERIC	
557	61474-0078-00	GEAR-LOADING A;DURACON M90-02	
559	61473-0005-00	GEAR-CAM TENSION;BERIC	
562	66202-0012-01	SWITCH-MODE ASS'Y;SRZZOA083A DE-4U	
565	69063-214-244	ASSY-GEAR CAM MAIN;DE-4A	
568	61524-0003-00	ROLLER-CAM MAIN;SUS303	
569	60102-0023-00	PLATE-SLIDER ASS'Y;DE-4	

9-4. MECHANICAL PARTS (3)



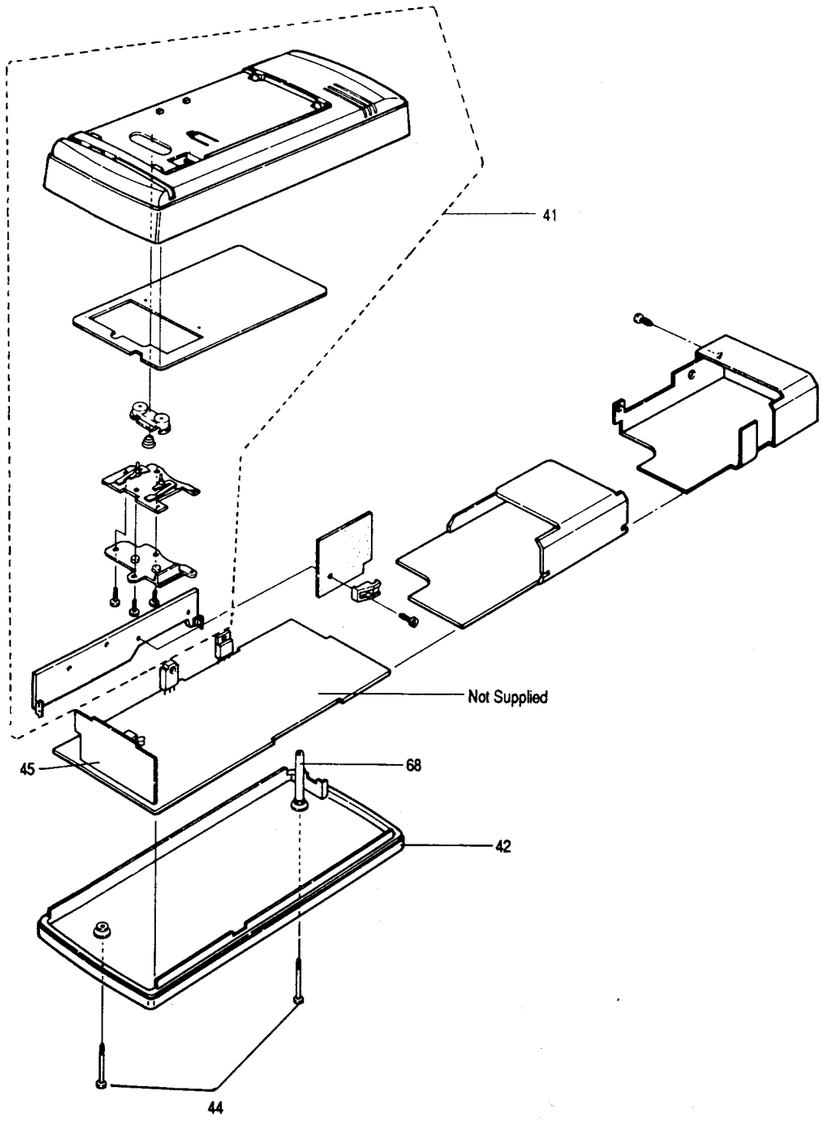
Loca.No	Part No	Description & Specification	Remark
001	60504-0005-00	SCREW-BH;BH + M1.4 L2 WHT	
002	60504-0015-00	SCREW;BH + FP M1.4 L1.2 S45C-HC BLK	
003	60504-0017-00	SCREW;BH + FP M1.4 L2.2 S45C-HC BLK	
023	60534-0006-00	WASHER-SLIT;PI0.95 OD2.5 T0.25	
025	60534-0023-00	WASHER-SLIT;ID2.6 OD5 T0.25 POLYSLIDER BLK	
412	61543-0066-00	ARM-POLE BASE T(ASSY);SUS+ZDC-2 T2.0 DE-4	
422	61543-0067-00	ARM-POLE BASE S(ASSY);SUS+ZDC-2 T2.6 DE-4	
433	62724-0099-00	SPRING-(T) REVIEW ARM;TS SUS304WPB PI0.26 D2.93	
435	61543-0059-00	ARM-REVIEW ASS'Y;STS303/STS304/CSP	
440	61543-0063-00	ARM-PINCH R ASS'Y(ASSY-$_{TI}$);DE-4A	
445	61543-0061-00	ARM-TENSION;STS303/STS304 T0.5 L43	
447	63324-0057-00	HOLDER-TEN BAND ASS'Y;DE-4	
449	61534-0068-00	LEVER-GUIDE ASS'Y;STS303/POM	
451	61543-0012-00	ARM-CLUTCH ASSY;DURACON M90-02	
453	61534-0059-00	LEVER-BRAKE T ASS'Y;DE-4	
456	61573-0020-00	REEL-T(ASSY);DE-4A	
458	61573-0019-00	REEL-S ASSY;DE-4A	
462	62614-0006-00	BRAKE-LEVER S;DURACON M90-02 NAT DE-4	
463	62724-0088-00	SPRING-LEVER BRAKE S;SUS304 WPB	
466	61543-0049-00	ARM-BRAKE S;DURACON M90-02 NAT	
467	62724-0087-00	SPRING-ARM BRAKE S;SUS304 WPB	
470	61643-0018-00	SLIDER-L.G;SUS304-CSP 0.4T	
474	63082-0010-00	RAIL-GUIDE T;DURACON M90-02(NAT)	
477	63081-0009-00	RAIL-GUIDE S;DURACON M90-02 NAT	
481	63334-0003-00	CLAMP-LOCKER SUB CHASSIS;SUS304-CSP T0.6	
484	69063-214-314	ASSY FPC SUB CHASSIS;DE-4U	
486	62599-099-033	SENSOR-REEL;TLP 907Y	
487	63324-0014-00	HOLDER-CASSETTE LED;DURACON M90-02(BLK)	
488	62309-112-045	LED-IR;GL453	
489	66209-0019-00	SWITCH-HOUSING;LSA-1112J2PT 15V 2MA	
490	66204-0018-00	SWITCH-DETECTOR;SPPW63	
491	63323-0016-00	HOLDER-END SENSOR;DURACON M90-02(BLK)	
492	63323-0015-00	HOLDER-START SENSOR;DURACON M90-02(BLK)	
493	66214-0014-00	SENSOR-TOP/END;PT4800F	
495	66044-0089-00	FPC-CONNECTION;FPC T0.2 DE-4U	

9-5. E.V.F



Loca.No	Part No	Description & Specification	Remark
164	69063-214-432	ASSY-CRT;VN-U12	
165	69063-214-433	ASSY-RING EVF;VN-U12 SPORTS	
166	62031-0158-01	CASE-EVF(R);ABS94V0 T1.5 BLK VP-U12/SEG	
167	62031-0157-00	CASE-EVF(L);ABS94V0 T1.5 BLK VN-U12	
168	63323-0271-00	HOLDER-LENS(A);ABS94HB BLK VN-U12	
169	62714-0050-00	LENS-EVF(G);F1 D15.5 SP	
170	63353-0080-00	GUIDE-LENS;ABS94HB T.15 BLK VN-U12	
171	60573-0019-00	RING-EVF;ABS94HB ID18 OD29 BLK T1,5 VN-U12	
172	63323-0272-00	HOLDER-LENS(B);ABS94HB BLK VN-U12	
173	62724-0180-00	SPRING-PLATE RING EVF;PS STS301 T0.4 OD26 (VN-U10)	
174	62713-0049-00	LENS-EVF(MD);PMMA D19.1 ASP	
175	63324-0236-00	HOLDER-EYE CUP;ABS94HB BLK (VN-U12)	
176	63394-0055-00	RUBBER-EYE;SILICONE (VN-U12)	
177	69063-214-223	ASSY EVF BOARD;VP-U12 PAL	
189	63314-0126-00	COVER-HOLF(EVF);BR T3.0 BLK (VN-U12)	
904	67128-521-206	SCREW-TAP TITE BH;3B+2X6 FE FZB	

9-6. ADAPTOR



Loca.No	Part No	Description & Specification	Remark
41	69063-213-495	ASSY CASE TOP;AA-E1P CASE TOP	
42	66032-603-110	CASE-BOTTOM;ABS 94V0	
44	60504-0053-00	SCREW-TAP TITE;PWH + TB M3 L25 SWRCH10A BLK	
45	69063-213-943	ASSY SUB 1 BOARD;AA-E1 NTSC/PAL	
68	67354-600-810	RING-GUIDE;ABS 94V0	

10. ADJUSTMENT

10-1. MECHANICAL ADJUSTMENT

10-1-1. Playback Tension Adjustment (See Fig. 1)

1. Remove Cover Housing, Case-Top, Case Front, Case-Right Ass'y. (See section 4-1-1, 4-1-2, 4-1-3, and 4-1-4 on the page 4-1,4-2)
2. Supply DC 7.5V to Battery Terminal.

1) Set the Torque Cassette.
2) Set the Play mode, and confirm that Reel Disk S torque value is within 4.5 ± 1 g/cm.
3) If the torque value does not meet the specification, adjust the Tension Band.

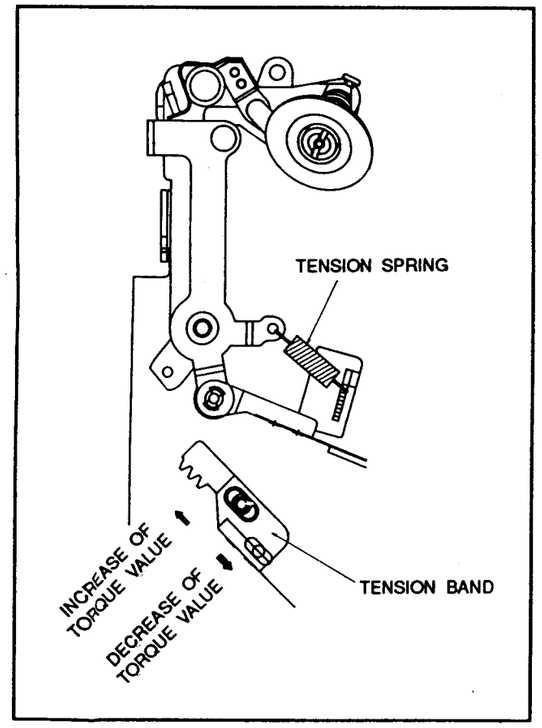


Fig. 1 Playback Tension Adjustment

10-1-2. Reel Torque Check

1) Set the Torque Cassette.
2) Set the Play mode, and confirm that Reel Disk T torque value 10.5 ± 3.5 g/cm.
3) Set the RPS mode and confirm that Reel Disk S torque value is within 35 ± 5 g/cm.
4) If the torque value does not meet the specifications, replace the corresponding Reel Disk.

10-1-3. Tape Path Adjustment

1. Layout of Tape Transport Adjustment

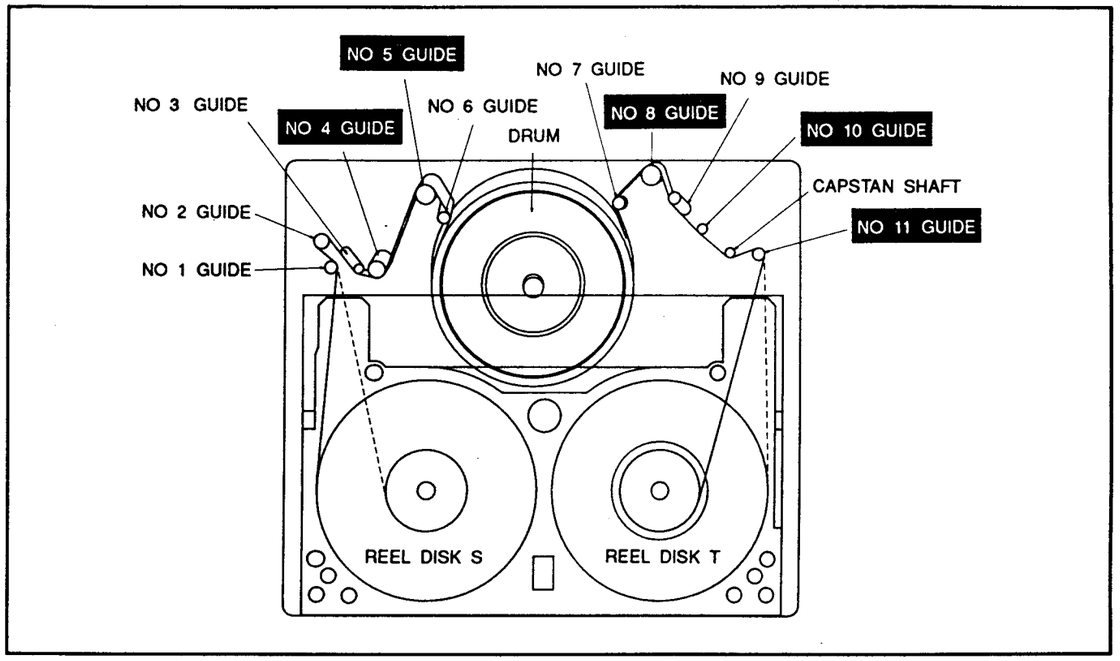


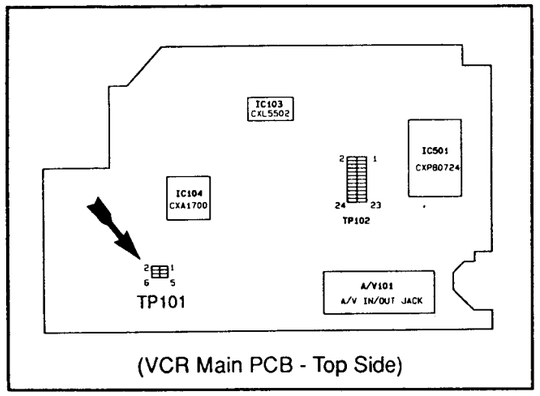
Fig. 2 Layout of Tape Transport Adjustment

Guide NO.	Component Name	Adjustment Purpose
NO. 1	Tension Pole	—
NO. 2	Roller Lever/G	—
NO. 3	Slant Pole SUB	—
NO. 4	Impedance Roller	Tape Height
NO. 5	Guide Roller "S"	Envelope
NO. 6	Pole Slant "S"	—
NO. 7	Pole Slant "T"	—
NO. 8	Guide Roller "T"	Envelope
NO. 9	Pole Slant CAP	—
NO. 10	Shaft Pole Guide	Tape Guide
NO. 11	Post Review Arm	Tape Wrinkle

2. Preparation for Adjustment

1) Clean tape path surfaces. (Guide Roller, Tape Guides, Drum) (See Fig. 2)
2) Connection of oscilloscope and output of waveform.

Test Point : Pin 6 of TP101 (PB RF)
Pin 2 of TP101 (H'D SW - Trigger)



(VCR Main PCB - Top Side)

3. Tracking Adjustment

1) Playback the alignment tape for tracking adjustment.
2) Confirm that both the entrance and exit side RF waveforms of oscilloscope are flat. (See Fig. 3) If they are not, adjust as follows. (Tracking fine adjustment)

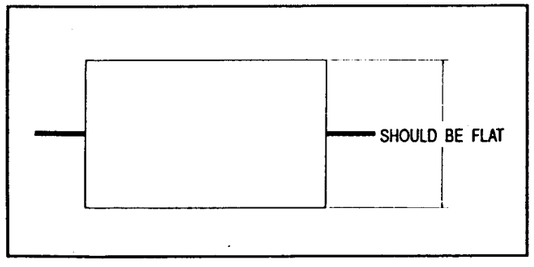


Fig. 3

4. Tracking fine Adjustment (See Fig. 4)

【1】 Playback the alignment tape for tracking adjustment.

≪Adjustment of Drum entrance side≫
1) Confirm whether the waveform is flat or not.
2) If it shows like A : Adjust No. 5 Guide (Guide Roller S) clockwise to get the flat envelope waveform.
3) If it shows like B : Adjust No. 5 Guide counterclockwise to get the flat envelope waveform.

≪Adjustment of Drum exit side≫
1) Confirm whether the waveform is flat or not.
2) If it shows like C : Adjust No. 8 Guide (Guide Roller T) colckwise to get the flat envelope waveform.
3) If it shows like D : Adjust No. 8 Guide counterclockwise to get the flat envelope waveform.

【2】 Reconfirm the envelope waveform.

1) After following step 【1】 reconfirm that envelope waveform has not changed.
2) If it's changed, please repeat step 【1】 .

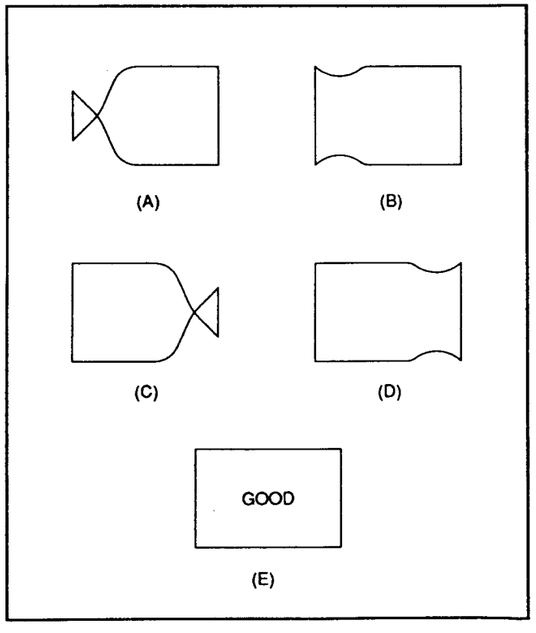


Fig. 4

5. Tape Guide Adjustment

【1】 No. 4 Guide Adjustment (See Fig. 5 and 6)

1) Playback the alignment tape.
2) Check that the tape is not bent at the Lower Flange.
3) Guide the tape to the Lower Flange.
4) CUE/RPS the tape, then Play it Back and confirm that the RF waveform rises flat within 2.5 seconds. (See Fig. 5)
5) If the waveform is not normal, repeat step 3) and 4) until a normal waveform is obtained.

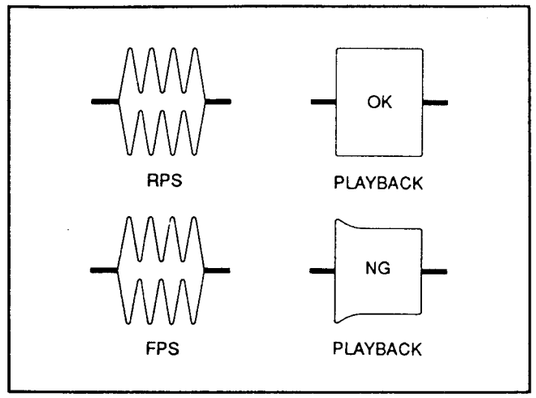


Fig. 5

【2】 No. 10 Guide Adjustment (See Fig. 6)

1) Playback the alignment tape and guide the tape to the Lower Flange.
2) CUE/RPS the tape, then Play it Back and confirm that the tape is not bent at the Flange, instead of check that RF waveform rises flat within 2.5 seconds in the PLAYBACK mode.
3) If the waveform is not normal, repeat steps 1) and 2) until a normal waveform is obtained.
4) If the tape is bent in the RPS mode, Adjust No. 11 Guide until the tape is straightened.

【3】 No. 11 Guide Adjustment (See Fig. 6)

1) Playback the alignment tape.
2) Check that the tape is not bent between No. 10 Guide and Capstan.
3) Set the Play mode again and confirm that the tape is not bent. If the tape is bent, repeat steps 1) and 2).

【4】 CUE and RPS Waveform Check (See Fig. 7)

1) Playback the alignment tape for tracking adjustment and set the RPS mode. Confirm that waveform peaks maintain a constant pitch for 5 seconds or more. In case pitch is not constant, perform section 4 tracking fine adjustment and section 5 tape guide adjustment. (No. 11 Guide)
2) Set the CUE mode and confirm that waveform peaks maintain a constant pitch for 5 seconds or more, otherwise, perform section 4 and section 5. (No. 4 Guide)

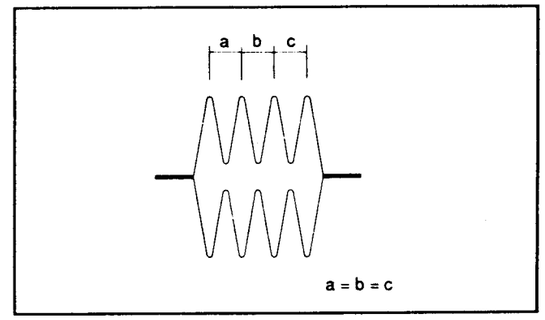


Fig. 7

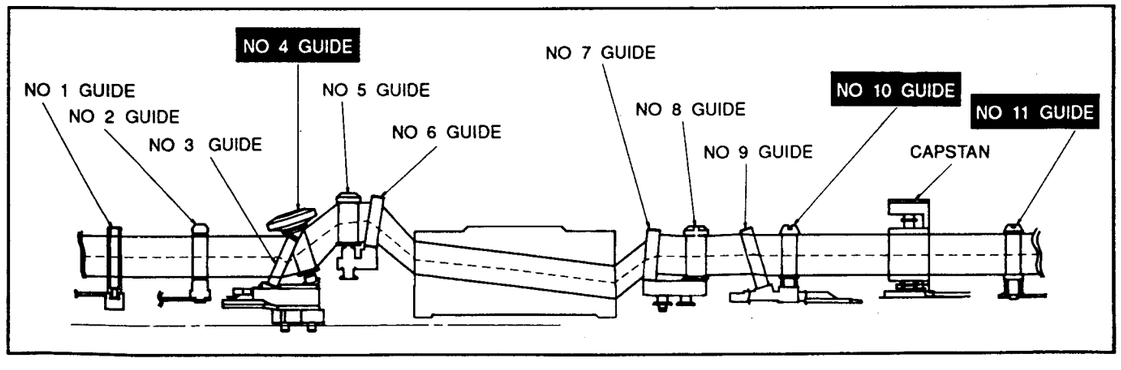


Fig. 6 Tape Travel Diagram

10-1-4. Check After Adjustment

1. Tape Path Check (See Fig. 6)

1) Playback a tape and confirm that no tape rising and curling occur at the Lower Flange of No. 4 Guide, the Upper Flange of No. 8 Guide, the Lower Flange of No. 10 Guide and the No. 11 Guide Upper and Lower Flanges.
2) In the FPS, RPS, FF, REW mode, check step 1 again.
3) If no tape rising and curling occur, repeat section 4 and 5 once more.

2. Envelope Stability Check

1) Playback the alignment tape.
2) Eject the tape, then load it again.
3) Confirm the envelope waveform.

*** STOP → PLAY ;**
Set the Play Back mode and confirm that RF waveform rises flat within 2.5 seconds, also confirm that the tape is not bent around the Pinch Roller.

*** FPS/RPS → PB, FF/REW → PB ;**
CUE/RPS and FF/REW the tape, then Play it Back and confirm that the RF waveform rises flat within 2.5 seconds also confirm that the tape is not bent around the Pinch Roller.

3. Tracking Check

1) Playback the alignment tape.
2) Then confirm that the minimum amplitude value (Emin) is 65% of the maximum value (Emax) or larger. (See Fig. 8 (A))
3) Confirm that no large fluctuations occur on the waveform. (See Fig. 8 (B))

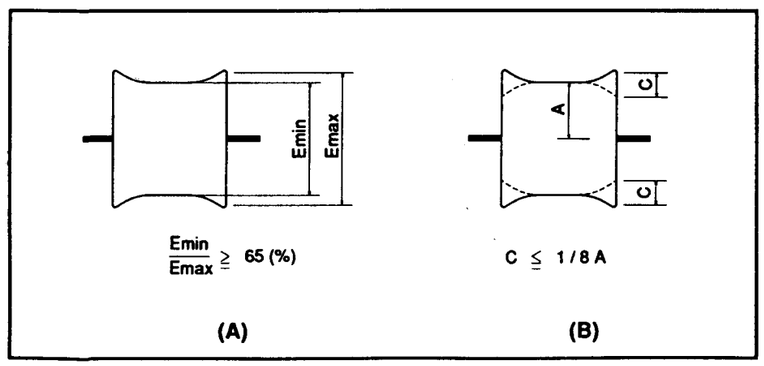


Fig. 8

4. Self-Recording Envelope-Waveform Check

1) After self-recording in the SP mode playback the tape and confirm that the RF waveform meets the specification. (See Fig. 9)
Also, check that the level of the amplitude value meets specification. (See Electronic specification)
2) In each mode, confirm that the difference of the amplitude (CH1 and CH2) is 65% or larger. (See Fig. 9)
If it does not meet specification, change Drum Ass'y to a new Drum Ass'y.

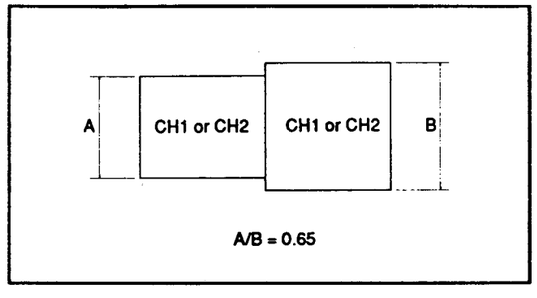


Fig. 9

10-2. CAMERA SECTION ADJUSTMENT

NOTE

This CAMERA System has
- *** EVR (Electronic Variable Register) control method by D/A converter instead of VR control method.**
- *** EEPROM to store the confirmed adjustment data.**
- *** DSP (Digital Signal Process ; ICP01 - Process board) chip to process the signal of Camera parts.**
- *** One Test point for the frequency adjustment of DSP main clock (P. CLK).**
- *** The special mode for Camera adjustment using remote control card.**

Keep in mind ;
1. Readjustment is needed when the lens assembly is removed from CCD board.
   The reason is that shifting of zoom track or iris level occurs when the CCD board and lens assembly are reassembled after servicing.
2. Readjustment is needed when the EEPROM (ICP05 of Process Board) and zoom lens assembly are replaced. The reason is that EEPROM stores confirmed adjustment value of each adjustment step.
3. All adjustment steps of the camera section should be performed using the remote control card.

10-2-1. Preparations

1. Equipment to be used

1) DC Power supply
2) Oscilloscope
3) Frequency Counter
4) PAL vectorsccope
5) PAL waveform monitor
6) PAL color monitor or TV
7) Various charts
   - Color bar chart
   - Gray-scale chart, etc ...
8) Alignment tape (Lion pattern)
9) Remote Control card (Part No. **67173-0182-04**)

2. Compositfon of Camera P.C.Boards

1) Process PCB
2) CCD PCB
3) EVF PCB

3. Adjustment Preparations

- * Remote Control Card is used as a Camera Adjust Tool.
- * Press the confirm button when each manual adjustment step is completed to write the adjustment data to the EEPROM.
- * After each adjustment step is completed, OSD shows "OK!".
- * To cancel the adjustment mode, remove the power source.

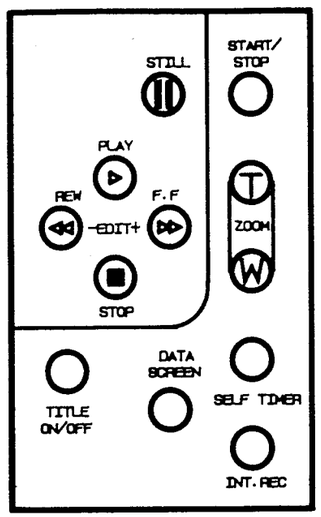
4. Remote Control

*The following is a chart explaining the use of each button :

USING BUTTON	ADJUSTMENT
CONFIRM	DATA stored after finishing adjustment by mode or enable to automatic adjustment mode.
DATA UP	When changing DATA value of adjust state.
DATA DOWN	
MODE UP	Mode change.
MODE DOWN	
NEAR	Focus adjustment.
FAR	
WIDE	Used for manual focus adjustment.
TELE	

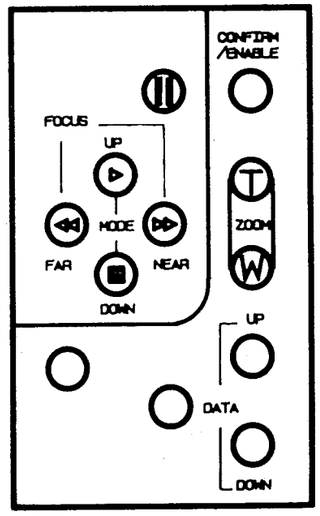
This remote is used to control the camcorder. It is also used to adjust the camera section when the unit is in service "ADJUST" mode.

Remote for Camcorder



REASSIGNMENT
IN THE
ADJUSTMENT MODE

Figure of Button Placement when remote is used for Service Adjustments.



Note: In Service Adjustment mode, button names are different from those in customer camera function control mode.
EX) start/stop button is the same as Confirm/Enable.

5. How to get into service "ADJUST" mode.

STEP 1

1. Remove the lithium battery from the camcorder.
2. Connector the power sourse (battery/DC cable).
3. Eject the tape if it is in the unit.
4. Set the power switch of the camcorder to "CAM" position.
5. Set OSD on state.

STEP 2

1. Press the "M/F" button on the left case then, OSD shows "M.Focus".
2. Tern the scene S/W to "HSS".
3. Press the "DSE" button three times on the left case OSD shows "DSE 3".
4. Press and hold the "B.Light" button more than 3 seconds.

Note: When "XX XX" is shown in service adjustment procedures, this indicates variable values.

STEP 3

"ADJUST ?" will now be blinking at center of screen. Now press "START/STOP" button of remote control card.

On screen display shows "51 V-SR 00 00" CAMERA ADJUSTMENT mode has successfully been activated.

During Camera adjustment, the OSD displays the following abbreviations to indicate the selected mode.

Example) "51 V-SR 00 00"

Note: "DATA 1" is previous setting in memory, "DATA 2" is new adjustment setting, that changes during adjustment mode. After pressing "START/STOP", it goes to memory.

MODE	OSD	DATA 1	DATA 2	MEAN	REMARK
51	V-SR	00	00	VOLTAGE SUB/RESET-GATE	NOT USE
53	AGC	00	00	AGC ADJUST	AUTOMATIC
54	A-HL	00	00	HALL ADJUST	AUTOMATIC
55	AWB	00	00	AUTO WHITE BALANCE	AUTOMATIC
57	V-SR	00	00	LENS ADJUST	NOT USE
00	Y-R	8A	8A	Y GAMMA	FIXED
01	VSUB	62	62	VOLTAGE SUB	ADJUST
02	IRIS	85	85	IRIS CONTROL	ADJUST
05	V RG	4D	4D	VOLTAGE RESET-GATE	ADJUST
06	M-HL	B4	B4	HALL REF	CHANGE
08	LENS	00	00	ZOOM TRACK ADJUST	ADJUST
12	COV2	68	68	AUTO KNEE COEF. 2	FIXED
13	CAP	80	80	APERTURE GAIN CONTROL	FIXED
14	CCOA	21	21	COLOR SEPARATION COEF. 1	FIXED
15	CCOB	33	33	COLOR SEPARATION COEF. 2	FIXED
16	CAKP	D0	D0	AUTO KNEE POINT	FIXED
17	CNSL	02	02	NOISE SLICE LEVEL	FIXED
18	CAPS	10	10	EDGE CHROMA GAIN CONTROL	FIXED
19	CRCO	40	40	CCR GAIN CONTROL	FIXED
1A	CBCO	40	40	CCB GAIN CONTROL	FIXED
1B	CGCO	80	80	YL GAIN CONTROL	FIXED
1E	MRPW	40	40	R PRE WHITE BALANCE	FIXED
1F	MGPW	20	20	G PRE WHITE BALANCE	FIXED
20	MBPW	40	40	B PRE WHITE BALANCE	FIXED
21	MRWB	40	40	R WHITE BALANCE	ADJUST
22	MBWB	80	80	B WHITE BALANCE	ADJUST
23	MDSR	02	02	DARK SLICE LEVEL R	FIXED
24	MDSB	00	00	DARK SLICE LEVEL B	FIXED
25	MDSG	FD	FD	DARK SLICE LEVEL G	FIXED
26	MRHC	40	40	R HUE CONTROL	ADJUST
27	MBHC	15	15	B HUE CONTROL	ADJUST
28	MRYG	40	40	R-Y GAIN CONTROL	ADJUST
29	MBYG	29	29	B-Y GAIN CONTROL	ADJUST
45	EHBB	D7	D7	B-Y BURST PHASE CONTROL	FIXED
46	EHBR	27	27	R-Y BURST PHASE CONTROL	FIXED
47	ECFA	40	40	CHROMA FADE CONTROL	FIXED
48	EWCL	F0	F0	WHITE CLIP LEVEL	FIXED
49	EYFA	80	80	Y FADE CONTROL	FIXED
4A	ESET	00	00	Y SETUP LEVEL	FIXED
66	AETR	XX	XX	AUTO IRIS TARGET	CHANGE
68	AGMI	XX	XX	AGC MINIMUM	CHANGE
69	AGMA	XX	XX	AGC MAXIMUM	CHANGE
6A	AEBL	XX	XX	AE BLC	CHANGE

MODE	OSD	DATA 1	DATA 2	MEAN	REMARK
0F	DCMD	04	04	DM (Detection Module) Command	FIXED
50		08	08	Low Light Chroma Gain	FIXED
5C		3E	3E	R-Y Gain Control (Out-Door)	FIXED
5D		38	38	B HUE Control (Out-Door)	FIXED
5E		80	80	PRE W/B	FIXED
5F		78	78	PRE W/B	FIXED
07		00	00	C GAMMA CONTROL	FIXED
2A		B3	B3	MATRIX COEFF. A1	FIXED
2B		4D	4D	MATRIX COEFF. B1	FIXED
2C		1C	1C	MATRIX COEFF. A2	FIXED
2D		E4	E4	MATRIX COEFF. B2	FIXED
2E		01	01	SUPERIMPOSE COMMAND	FIXED
4B		00	00	Y BLACK LEVEL	FIXED
4C		A0	A0	ENCODER COMMAND 1	FIXED
4D		04	04	ENCODER COMMAND 2	FIXED
4E		00	00	T.G COMMAND 1	FIXED
4F		00	00	T.G COMMAND 2	FIXED

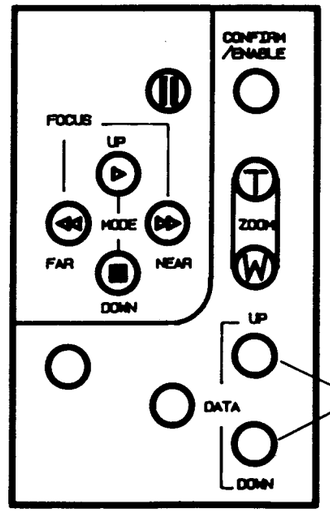
Note: On table you see the "XX XX" for DATA 1 / DATA 2. "XX XX" means arbitary value.

Example of the TV screen

51 V-SR 00 00

00: Data in memory

00: Data to be adjusted



When adjusting, use UP/DOWN key.

10-2-2. Camera System Adjustment

NOTE

From now on, the structure of every adjustment is as follows.

STEP	ADJUSTMENT ITEM
1.	MODE and INPUT SIGNAL/ALIGNMENT TAPE
2.	TEST POINT and ADJ. part
3.	RESULT & REMARKS

ADJ. part →
Test Point - - - →

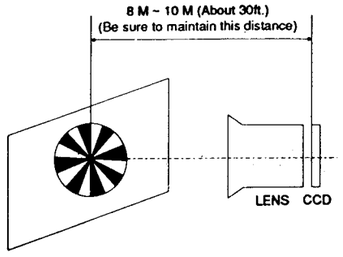
Note: The On-Screen Display Information.
"XX XX" means arbitary value.
It can be different number depend on the conditions.

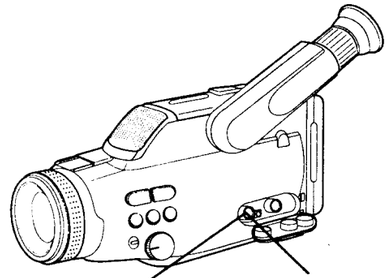
01	VSUB	XX	XX

1 FOCUS TO ZOOM TRACKING

Note : To maintain proper focus throughout the zoom range, the focus lens position must be changed as the zoom lens is moved. During this adjustment the microprocessor will measure the focus positioning requirements at the wide and telephoto position of the zoom lens.

1. CAMERA "E-E".
2. Focus Chart (Attached on the last page of this manual) & EVR.
3. 1) Aim the camera at the focus chart placed about 30ft. (8 to 10 meters) away and perpendicular to the center of the lens.
   The chart should be placed on the flat, gray or white wall.
   2) Connect monitor TV jack to video output jack.
   3) Press the "PLAY (MODE UP)" and "STOP (MODE DOWN)" buttons, so that the OSD state is "08 LENS XX XX".
   4) Focus Adjustment (There are two (2) ways to do the adjustment.)
   a. Full Auto : Press "START/STOP(CONFIRM)" button for full auto adjustment.
   The camera will move both zoom and focus lens. The adjustment is finished when the O.K message appears on the TV screen.
   b. Manual : Camera lens will be moved to all positions to set maximum focus setting.
   b-1. Manual adjustment by pressing the "TELE" button.
   The zoom lens should move to the middle angle position.
   b-2. Press the "WIDE" button to instruct the microprocessor to adjust the focus lens for optimum focus.
   b-3. Press the "START/STOP (CONFIRM)" button.
   The zoom lens should move to the tele zoom position.
   b-4. After the zoom lens reaches the Tele zoom position, repeat step **b-1**.
   b-5. Press the "START/STOP (CONFIRM)" button.
   The zoom lens should move to the middle zoom position.
   b-6. After the zoom lens reaches the middle zoom position, if focus state is not the optimum focus state, repeat step **b-1**, **b-2**, **b-3** and **b-4**.
   b-7. Press "START/STOP (CONFIRM)" button.
   The zoom lens should move to the wide zoom position, try to step **b-1**.
   b-8. Press "START/STOP (CONFIRM)" button to instruct the micro processor to write the focus lens position data to the EEPROM.
   The lens will move through the zoom range and the picture will fade out and then back in. The OSD will display "OK".

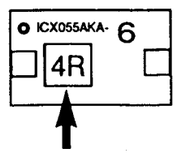




2 V SUB

1. CAMERA "E-E", no signal input.
2. Video output jack & EVR.
3. * Connect monitor TV to video output jack.
   * Press the "PLAY (MODE UP)/STOP (MODE DOWN)" button so that the OSD state is "01 VSUB XX XX".
   * V SUB specified voltage is indicated by one digit. (Rear of the CCD image sensor)
   * Adjust the "SELF TIMER (DATA UP)/INT.REC (DATA DOWN)" button so that the data is the specified HEX value.
   * Be sure to press the "START/STOP (CONFIRM)" button to memorize setting.

EXAMPLE



★ ICX055AK : CCD Device name
★ 4 : RG code address
★ R : V SUB voltage code address
R = 14.5V ---> 8B

(Rear of the CCD image sensor)

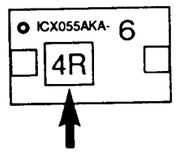
(Table for V SUB Voltage)

Digit	V SUB Voltage	HEX Value	Digit	V SUB Voltage	HEX Value	Digit	V SUB Voltage	HEX Value
E	9.0V	54	M	12.5V	77	U	16.0V	9A
F	9.5V	59	N	13.0V	7C	V	16.5V	9F
G	10.0V	5E	P	13.5V	81	W	17.0V	A5
H	10.5V	63	Q	14.0V	86	X	17.5V	AB
J	11.0V	68	R	14.5V	8B	Y	18.0V	B1
K	11.5V	6D	S	15.0V	90	Z	18.5V	BC
L	12.0	72	T	15.5	96	-	-	-

3 RG (Reset Gate)

1. CAMERA "E-E", no signal input.
2. Video output jack & EVR.
3. * Connect monitor TV to video output jack.
   * Press the "PLAY (MODE UP)/STOP (MODE DOWN)" button so that the OSD state is "05 V RG XX XX".
   * RG code is indicated by one digit. (Rear of the CCD image sensor)
   * Adjust the "SELF TIMER (DATA UP)/INT.REC (DATA DOWN)" button so that the data is the specified HEX value.
   * Be sure to press the "START/STOP (CONFIRM)" button to memorize setting.

EXAMPLE



★ ICX055AK : CCD Device name
★ 4 : RG voltage code address
4 = 2.5V ---> 80

(Rear of the CCD image sensor)

(Table for RG Voltage)

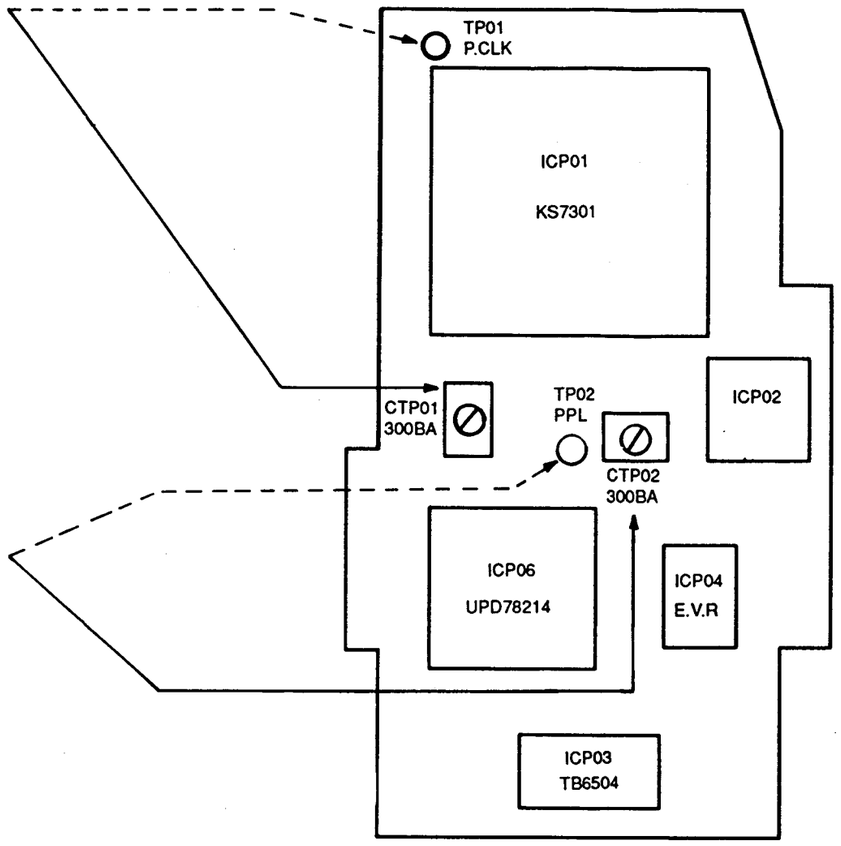
DIGIT	1	2	3	4	5	6	7
V RG VOLT	0.1	1.5	2.0	2.5	3.0	3.5	4.0
HEX Value	32	4D	67	80	9B	B7	D0

4 P. CLK ADJUSTMENT

1. "CAMERA", no signal input.
2. TP01 & CTP01.
3. * Connect a frequency counter to TP01.
   * Adjust CTP01 for **9.453125MHz ± 50Hz**.

5 PLL ADJUSTMENT

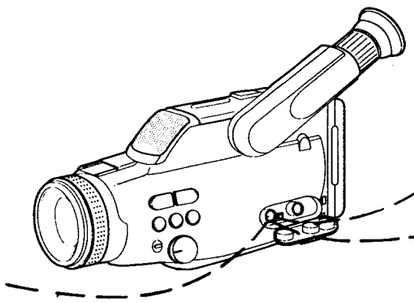
1. "CAMERA", no signal input.
2. TP02 & CTP02.
3. * Connect a frequency counter to TP02.
   * Adjust CTP02 for **2.5V D.C ± 0. 1V**.



PROCESS PCB (BOTTOM SIDE)

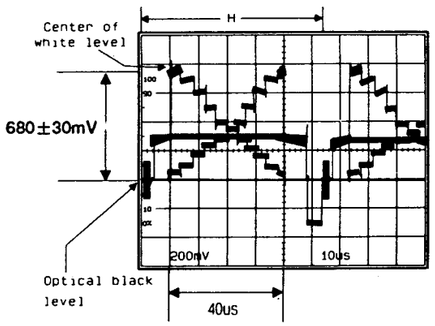
6 Y-GAMMA LEVEL

1. CAMERA "E-E", 3100° K gray-scale chart.
2. Video output jack & EVR.
3. * Connect monitor TV to video output jack.
   * Press the "PLAY (MODE UP)/STOP (MODE DOWN)" button so that the OSD state is "00 Y-R XX XX".
   * Aim the camera at a gray-scale chart evenly illuminated at 1500 to 2000 lux. (40 μs)
   * Adjust the "SELF TIMER (DATA UP)/INT.REC (DATA DOWN)" button so that the data is "**9A**".
   * Be sure to press the "STSRT/STOP (CONFIRM)" button to memorize setting.
   * The OSD shows "OK".



7 IRIS LEVEL

1. CAMERA "E-E", 3100° K gray-scale chart.
2. Video output jack & EVR.
3. * Connect video output jack to waveform monitor input jack and monitor TV jack respectively.
   * Press the "PLAY (MODE UP)/STOP (MODE DOWN)" button so that the OSD state is "02 IRIS XX XX".
   * Aim the camera at a gray-scale chart evenly illuminated at 1500 to 2000 lux. (40 μs)
   * Adjust the "SELF TIMER (DATA UP)/INT.REC (DATA DOWN)" button so that Y level is **680mVp-p ± 30mV.**
   * Be sure to press the "START/STOP (CONFIRM)" button to memorize setting.
   * The OSD shows "OK".



8 AUTO HALL

1. CAMERA "E-E", no signal input.
2. Video output jack & EVR.
3. * Connect monitor TV to video output jack.
   * Press the "PLAY (MODE UP)/STOP (MODE DOWN)" button so that the OSD state is "54 A-HL XX XX".
   * Press "START/STOP (CONFIRM)" button.
   * Then, the microprocessor will work.
     - IRIS closed, FINDS HALL minimum value,
     - IRIS open, FINDS HALL maximum value.
   * The OSD shows "OK".

9 AUTO AGC CONTROL

1. CAMERA "E-E", 3100° K gray-scale chart.
2. Video output jack & EVR.
3. * Connect monitor TV to video output jack.
   * Press the "PLAY (MODE UP)/STOP (MODE DOWN)" button so that the OSD state is "53 AGC XX XX".
   * Aim the camera at a gray-scale chart evenly illuminated at 1500 to 2000 lux. (40μs)
   * Press "START/STOP(CONFIRM)" button.
   * Then, the microprocessor will work.
     - FIND AGC maximum point data.
     - FIND AGC start point data.
   * The OSD shows "OK".

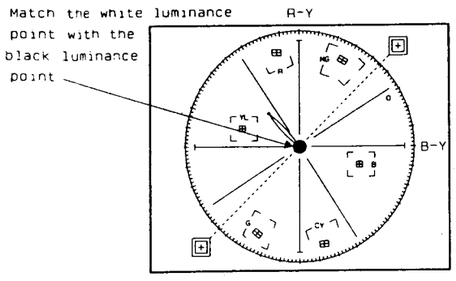
10 AUTO WHITE

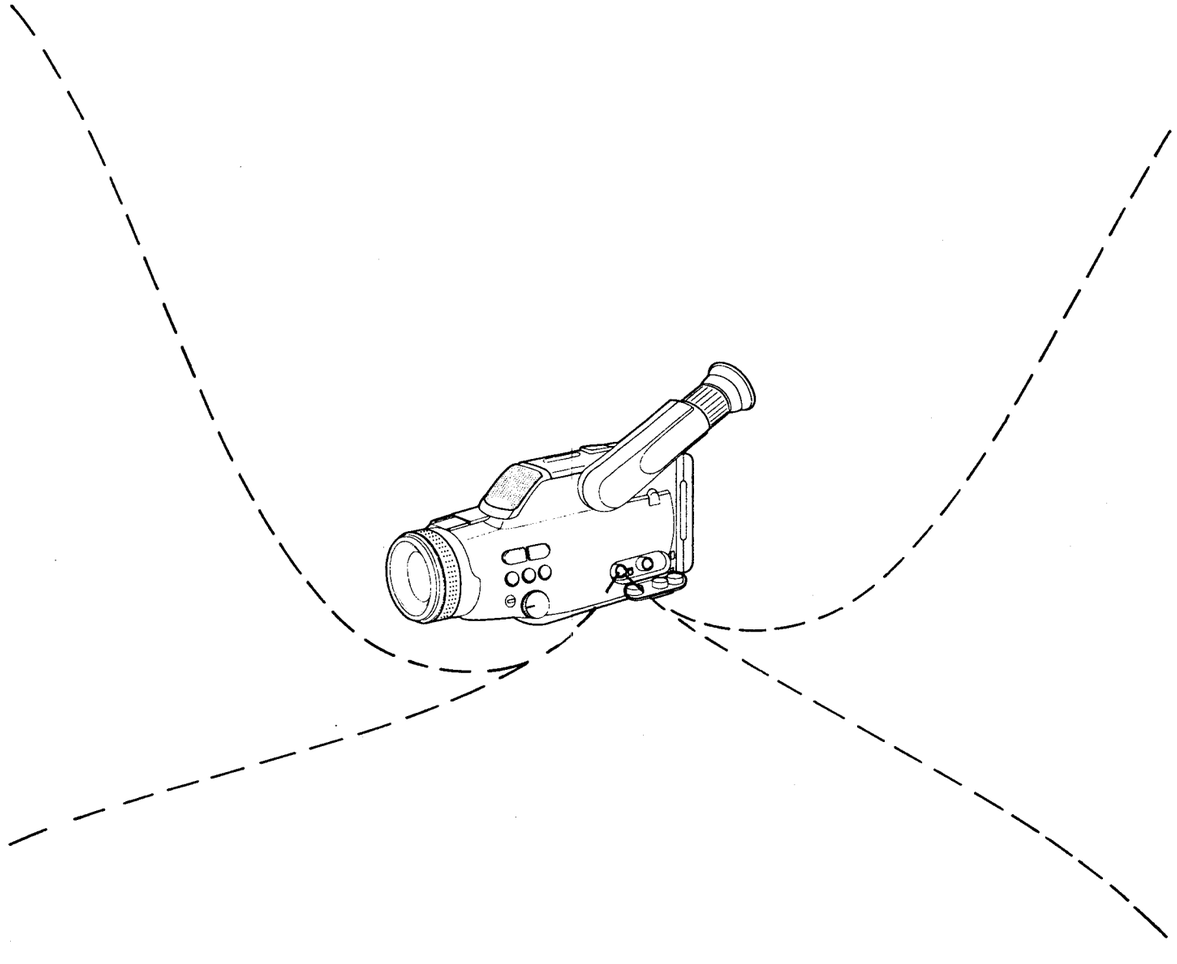
1. CAMERA "E-E", 3100° K/5100° K gray-scale chart.
2. Video output jack & EVR.
3. * Press the "PLAY (MODE UP)/STOP (MODE DOWN)" button so that the OSD state is "55 AWB XX XX".
   * Connect vectorscope input jack to video output jack.

1) W/B INDOOR
   - Aim the camera at a 3100° K gray-scale chart illuminated at 1500 to 2000 lux. (40μs)
   - Press "START/STOP (CONFIRM)" button so that the white vector moves to the center on screen of the vectorscope.

2) W/B OUTDOOR
   - Aim the camera at a 5100° K gray-scale chart illuminated at 1500 to 2000 lux. (40μs)
   - Press "START/STOP (CONFIRM)" button so that the white vector moves to the center on screen of the vectorscope.

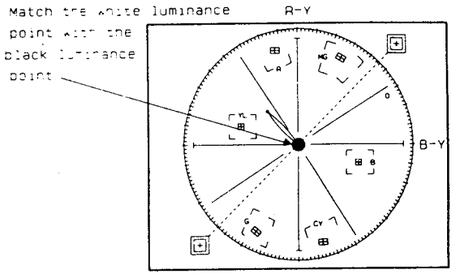
* The OSD shows "OK".





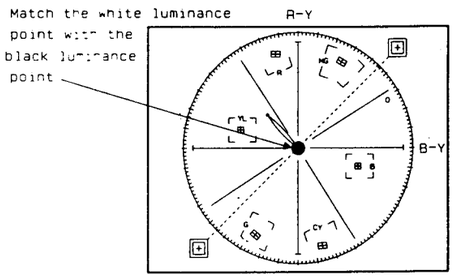
11 PRE WHITE BALANCE (I)

1. CAMERA "E-E", 3100° K gray-scale chart.
2. Video output jack & EVR.
3. * Press the "PLAY (MODE UP)/STOP (MODE DOWN)" button so that the OSD state is "21 MRWB XX XX".
   * Connect vectorscope input jack to video output jack.
   * Aim the camera at a color chart illuminated at 1500 to 2000 lux.
   * Use the "SELF TIMER(Data up), INT.REC (Data down), START/STOP(CONFIRM)" button so that the white vector moves to the center on screen of the vectorscope.
   * The OSD shows "OK".



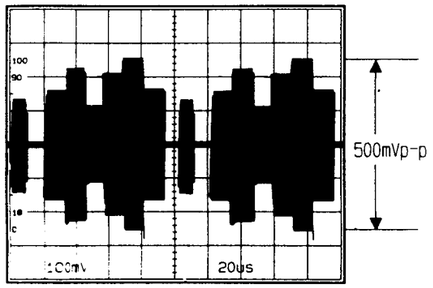
12 PRE-WHITE BALANCE (II)

1. CAMERA "E-E", 3100° K gray-scale chart.
2. Video output jack & EVR.
3. * Press the "PLAY (MODE UP)/STOP (MODE DOWN)" button so that the OSD state is "22 MBWB XX XX"
   * Connect vectorscope input jack to video output jack.
   * Aim the camera at a color chart illuminated at 1500 to 2000 lux.
   * Use the "SELF TIMER(Data up), INT.REC (Data down), START/STOP(CONFIRM)" button so that the white vector moves to the center on screen of the vectorscope.
   * The OSD shows "OK".



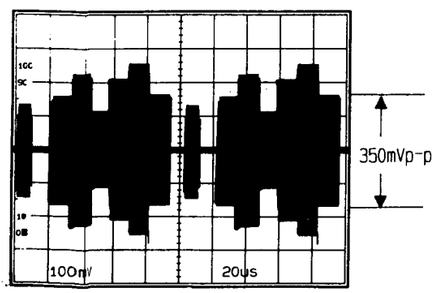
13 R-Y GAIN

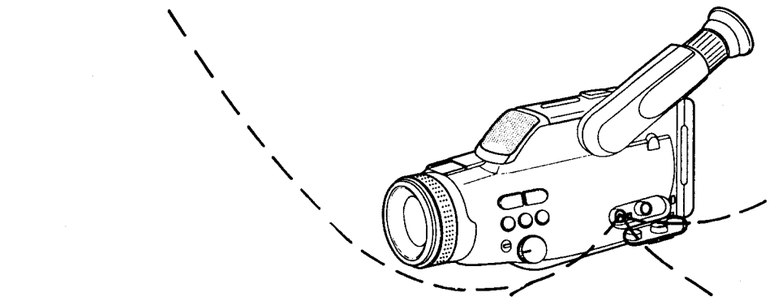
1. CAMERA "E-E", 3100° K color bar chart.
2. Video output jack & Register of EEPROM.
3. * Connect video output jack to waveform monitor input jack and monitor TV jack respectively.
   * Press the "PLAY (MODE UP)/STOP (MODE DOWN)" button so that the OSD state is "28 MRYG XX XX".
   * Aim the camera at a color bar chart illuminated at 1500 to 2000 lux.
   * Adjust the "SELF TIMER (DATA UP)/INT.REC (DATA DOWN)" button so that the Red level is **500mVp-p ± 35mV**.
   * Be sure to press the "START/STOP (CONFIRM)" button to memorize setting.
   * The OSD shows "OK".



14 B-Y GAIN

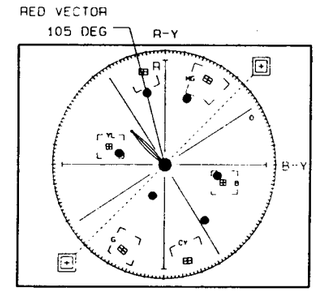
1. CAMERA "E-E", 3100° K color bar chart.
2. Video output jack & Register of EEPROM.
3. * Connect video output jack to waveform monitor input jack and monitor TV jack respectively.
   * Press the "PLAY (MODE UP)/STOP (MODE DOWN)" button so that the OSD state is "29 MBYG XX XX".
   * Aim the camera at a color bar chart illuminated at 1500 to 2000 lux.
   * Adjust the "SELF TIMER (DATA UP)/INT.REC (DATA DOWN)" button so that the Blue level is **350mVp-p ± 35mV**.
   * Be sure to press the "START/STOP (CONFIRM)" button to memorize setting.
   * The OSD shows "OK"





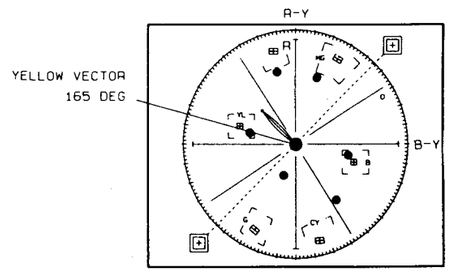
15 R-Y HUE

1. CAMERA "E-E", 3100° K color bar chart.
2. Video output jack & Register of EEPROM.
3. * Connect video output jack to vectorscope input jack and monitor TV jack respectively.
   * Press the "PLAY (MODE UP)/STOP (MODE DOWN)" button so that the OSD state is "26 MRHC XX XX".
   * Aim the camera at a color bar chart illuminated at 1500 to 2000 lux.
   * Adjust the "SELF TIMER (DATA UP)/INT.REC (DATA DOWN)" button so that the Red vector **105 ± 15 deg.**
   * Be sure to press the "START/STOP (CONFIRM)" button to memorize setting.
   * The OSD shows "OK".



16 B-Y HUE

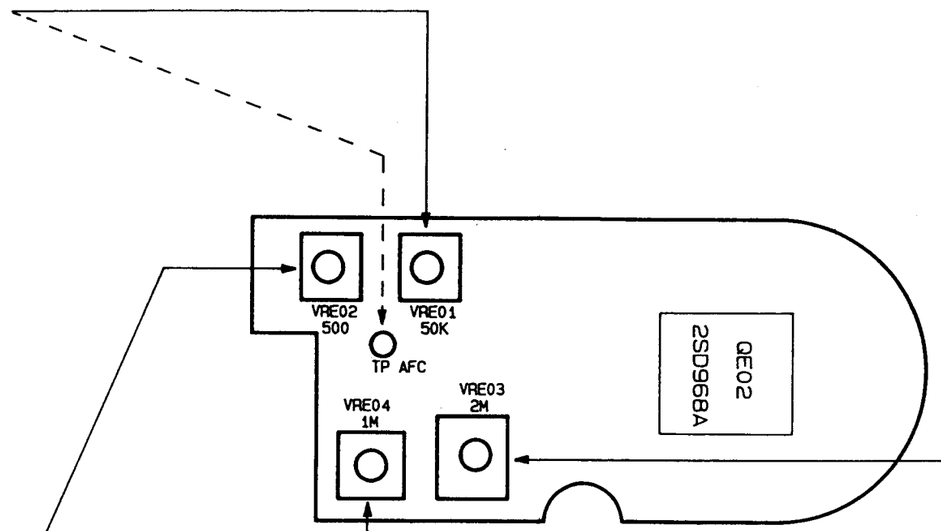
1. CAMERA "E-E", 3100° K color bar chart.
2. Video output jack & Register of EEPROM.
3. * Connect video output jack to vectorscope input jack and monitor TV jack respectively.
   * Press the "PLAY (MODE UP)/STOP (MODE DOWN)" button so that the OSD state is "27 MBHC XX XX".
   * Aim the camera at a color bar chart illuminated at 1500 to 2000 lux.
   * Adjust the "SELF TIMER (DATA UP)/INT.REC (DATA DOWN)" button so that the Yellow vector **165 ± 15 deg.**
   * Be sure to press the "START/STOP (CONFIRM)" button to memorize setting.
   * The OSD shows "OK".



10-2-3. EVF Adjustment

1	AFC

1. VCR "PB", Alignment tape (Lion pattern).
2. TP AFC & VRE01.
3. * Connect digital voltmeter probe to TP AFC.
   * Adjust VRE01 so that the voltage is DC 2.5V.



E.V.F PCB (BOTTOM SIDE)

2	V. SIZE

1. VCR "PB", Alignment tape (Lion pattern).
2. Viewfinder & VRE02.
3. * Adjust the VRE02 so that the center circle on the lion pattern is perfect circle.

4	FOCUS

1. VCR "PB", Alignment tape (Lion pattern).
2. Viewfinder & VRE03.
3. * Adjust the VRE03 for best resolution in the viewfinder.

3	BRIGHT

1. VCR "PB", Alignment tape (Lion pattern).
2. Viewfinder & VRE04.
3. * Adjust the VRE04 so that the 3rd and 4th steps of the lion pattern can be distinguished.

10-3. VCR SECTION ADJUSTMENT

10-3-1. Preparations

Note : Before preforming all VCR section adjustment, insert TP Board into TP102 of Main PCB. (See Fig. 3)

Use the following measuring instruments for adjustment of the VCR block.

1. Equipment to be used

1) Monitor TV
2) Dual trace oscilloscope of over 10MHz band, incorporates delay mode. (Use 10 : 1 probe unless otherwise specified)
3) Frequency counter
4) Pattern generator with video output terminal
5) Digital voltmeter
6) DC power supply
7) Alignment tape (Color Bar : SP)

2. Composition of VCR P.C.Boards

1) Main PCB (System Control/Servo, Video, Pre-Amp, Audio)
2) DC/DC Converter PCB

3. Connection of equipment

Unless otherwise specified, adjustment is made with the measuring instrument connected as shown in the diagram below.

- CAMERA/VCR power switch . . . . . VCR position

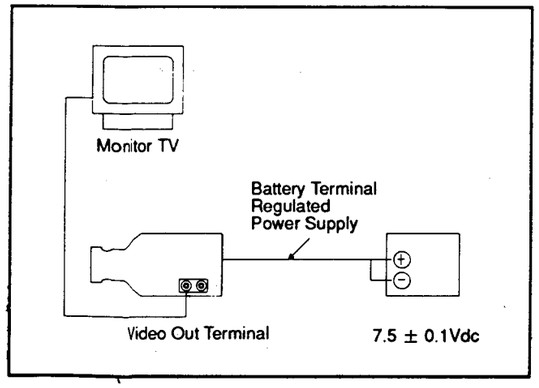


Fig. 1

4. Set-up during adjustment

Since the video output signal obtained from the pattern generator is used as the adjusting signal for the VCR block, it is necessary that this video output signal be within the required specifications. Connect an oscilloscope to video input jack and make sure that the amplitude of the video SYNC signal is approximately 0.3V, that the video block amplitude is approximately 0.7V, that the burst signal amplitude is approximately 0.3V with flat characteristics, and the signal level ratio between the burst signal and "Red" signal is 0.30 : 0.66. The video signal (color bars) used for VCR block electrical adjustment are shown in Fig. 2.

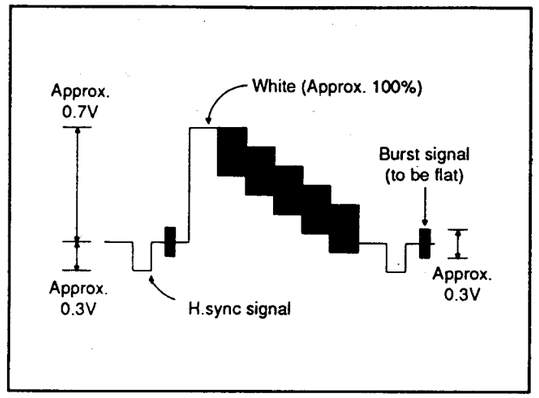


Fig. 2 Color bar signal of pattern generator

5. How to connect VCR adjustment jig

1) Insert TP Board into TP102 of Main PCB.
2) Connect Video Signal Input Cable between V-IN connector and video out of Pattern Generator to input video signal from Pattern Generator to TP Board as shown below.

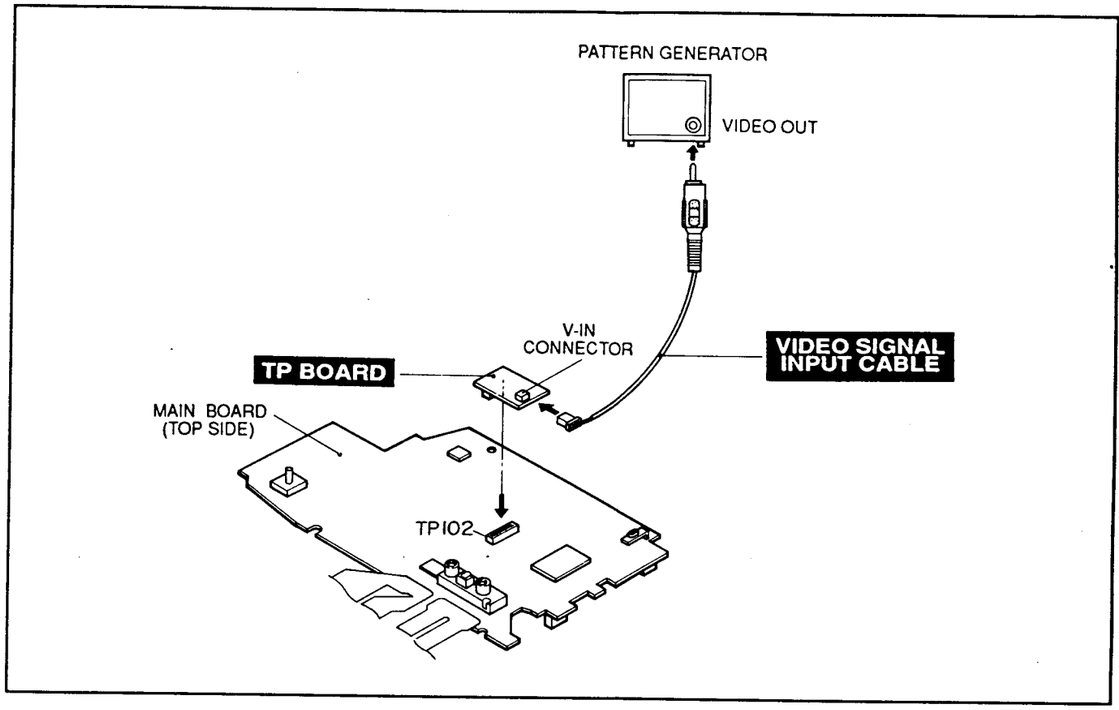
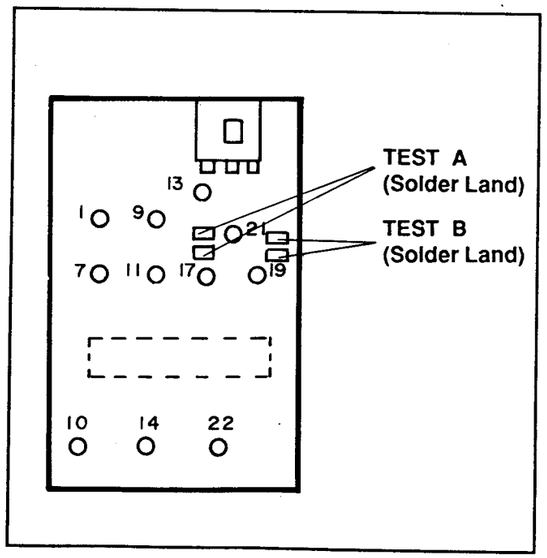


Fig. 3

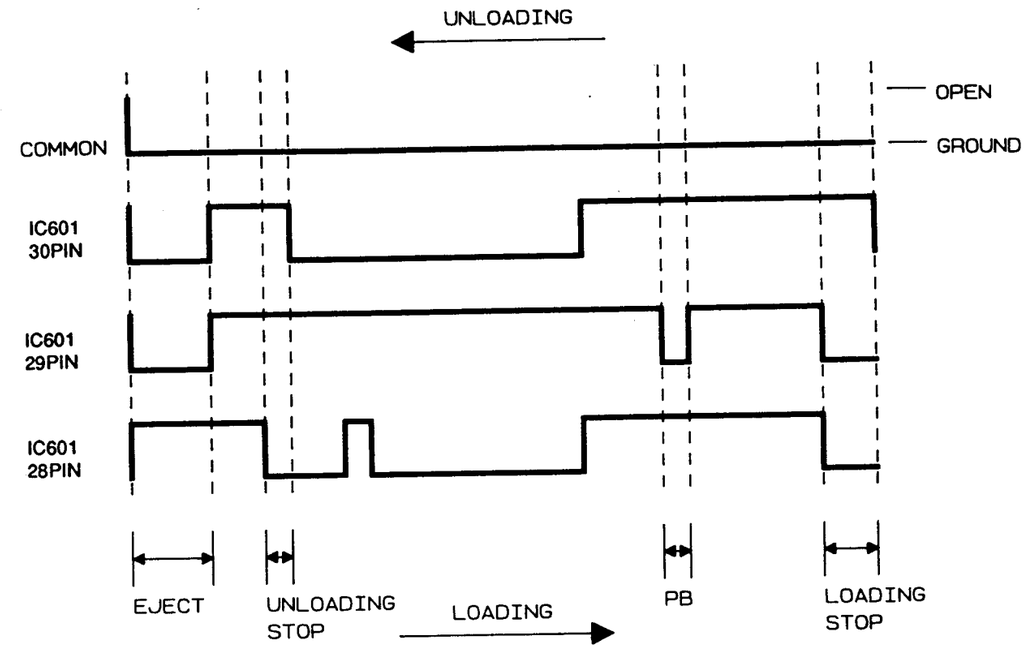
6. Detail drawing of TP Board



Pin-NO.	Use	Remark
1	Carrier Frequency adjustment	Audio Section
7	Capstan FG adjustment	System/Servo Section
9	DC 5V adjustment	DC/DC CONV. Section
10	Emphasis Input Level adjustment	Video Section
11	DC 15V adjustment	DC/DC CONV. Section
13	Ground	-
14	Y/C Separation adjustment	Video Section
17	TEST A	Short pin 17 & pin 21
19	TEST B	Short pin 19 & pin 21
21	Ground	-
22	Head Switching Point adjustment	System/Servo Section
	AGC adjustment	Video Section
	PB Output Level adjustment	Video Section

TEST A : For setting Head Switching Point adjustment
TEST B : For setting Record mode

PROGRAM S/W TIMING CHART



POSITION	IC601 30PIN	IC601 29PIN	IC601 28PIN	MODE
EJECT	L	L	H	EJECT
UNLOADING STOP	H	H	L	UNLOADING STOP
LOADING STOP	H	L	L	LOADING STOP
PB	H	L	H	PLAY. FF. REW. STILL. . .

10-3-2. DC/DC CONVERTER Section

NOTE

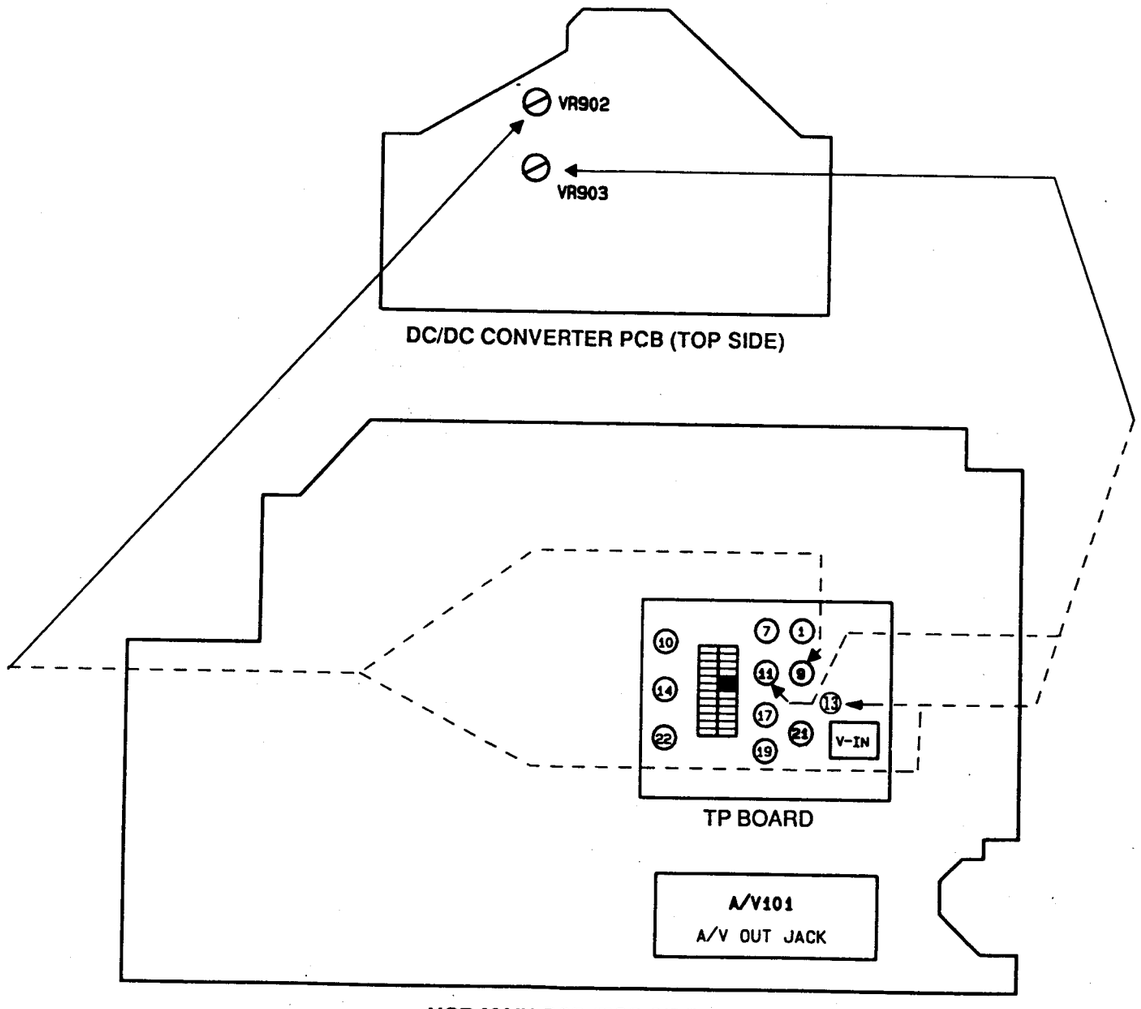
From now on, the structure of every adjustment is as follows.

STEP	ADJUSTMENT ITEM
1. MODE and INPUT SIGNAL/ALIGNMENT TAPE 2. TEST POINT and ADJ. part 3. RESULT & REMARKS	

ADJ. part →
Test Point ⇢

1	DC 5V

1. CAMERA, no signal input.
2. Pin 9(DC 5V), pin 13(Ground) of TP Board & VR902.
3. * Connect digital voltmeter probes to pin 9(DC 5V), pin 13 (Ground) of TP Board.
   * Adjust VR902 so that the digital voltmeter becomes DC 5.0 ± 0.05V.



2	DC 15V

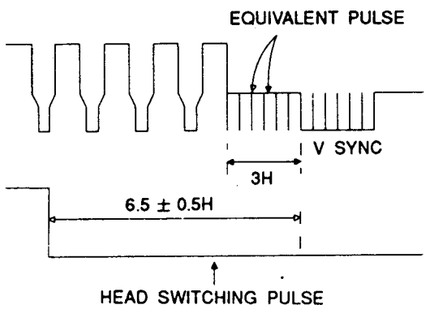
1. CAMERA, no signal input.
2. Pin 11(DC 15V), pin 13 (Ground) of TP Board & VR903
3. * Connect digital voltmeter probes to pin 11(DC 15V), pin 13 (Ground) of TP Board.
   * Adjust VR903 so that the digital voltmeter becomes DC 15.0 ± 1V.

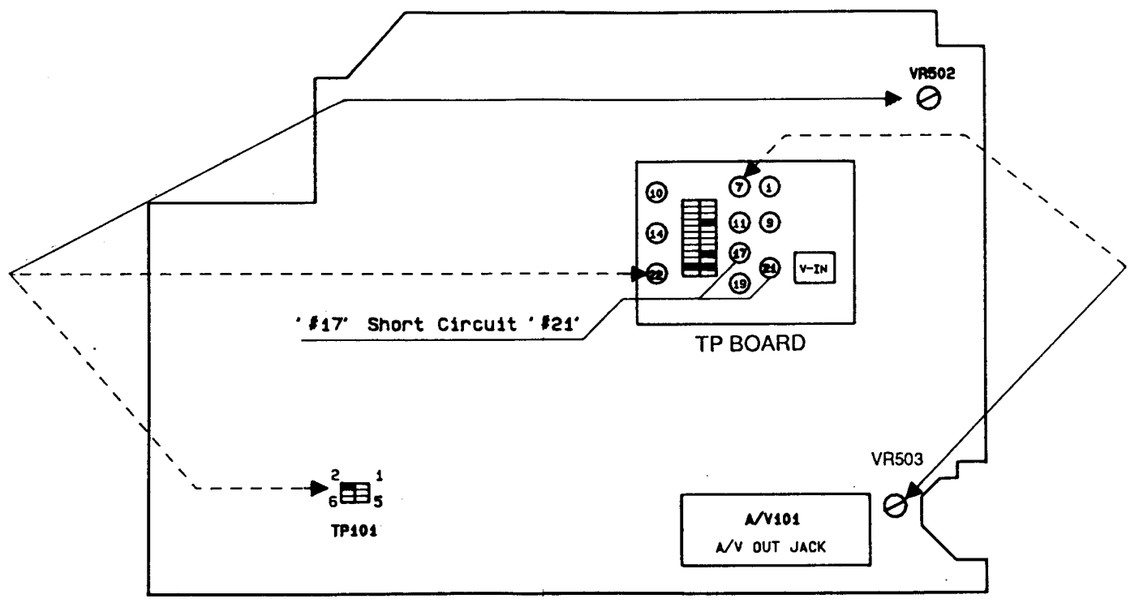
1 HEAD SWITCHING POINT

ADJUSTMENT CONDITION

◆ Short-circuit pin 17 and pin 21(TEST A) of TP Board.

1. "PB", Alignment tape (Color bar).
2. Pin 22 of TP Board, Pin 2 of TP101 (Trigger) & VR502.
3. * Connect an oscilloscope's CH-1 to pin 2 of TP101 for trigger and CH-2 to pin 22 of TP Board.
   * Adjust VR501 so that the switching point is positioned 6.5 ± 0.5H from the V-SYNC left edge as shown.

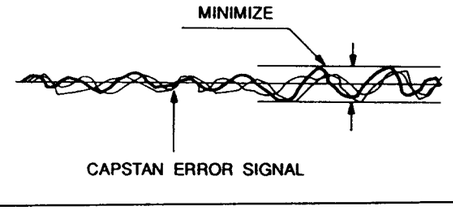




VCR MAIN PCB (TOP SIDE)

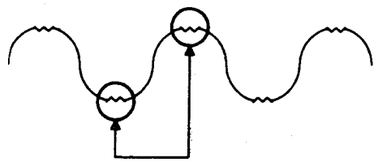
2 CAPSTAN FG

1. "LP-PB", Alignment tape (LP-Color bar).
2. Pin 7 of TP Board & VR503.
3. * Connect an oscilloscope to pin 7 of TP Board.
   * Adjust VR503 to minimize the width of voltage with LP-PB mode

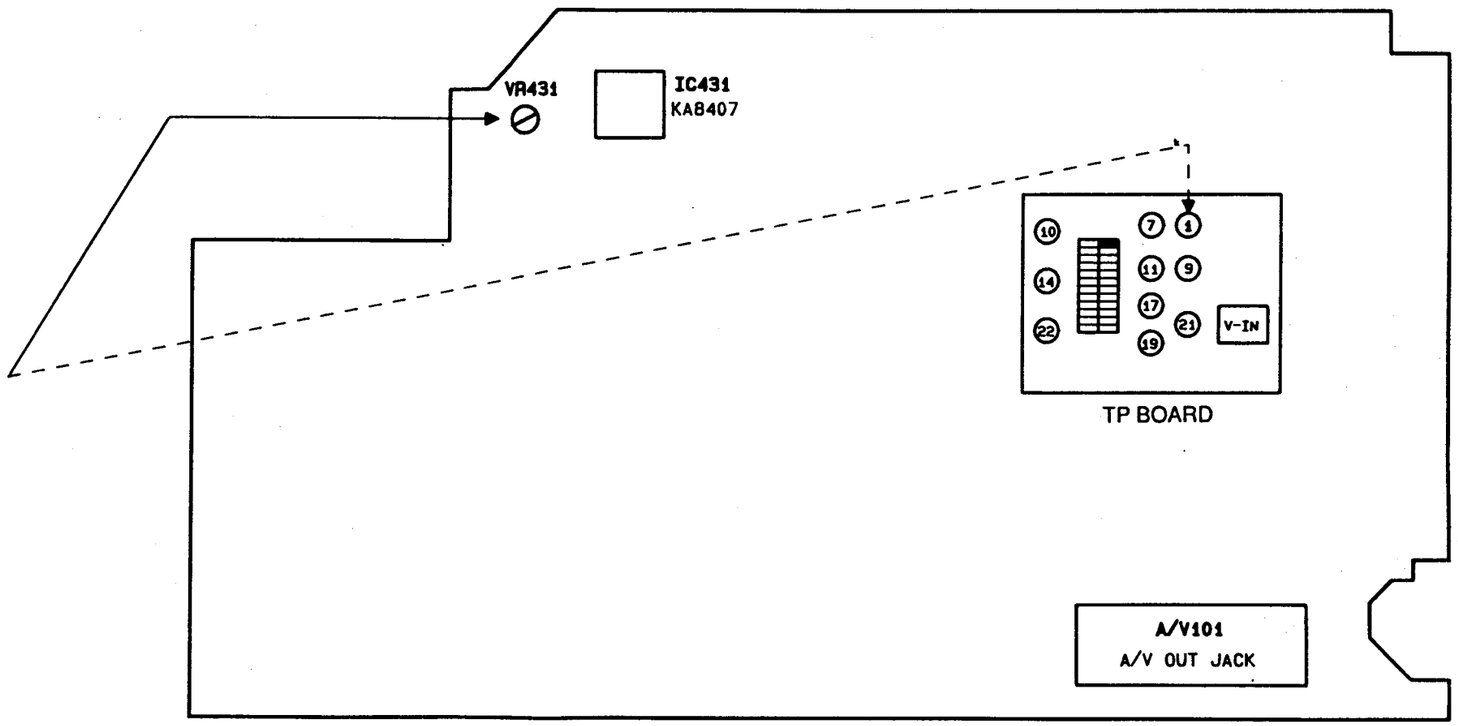


1	CARRIER FREQUENCY

1. "PB", Alignment tape (Color bar).
2. Pin 1 of TP Board & VR431.
3. * Connect an oscilloscope CH-1 to pin 1 of TP Board.
   * Adjust the output waveform to be complete sine wave and the noise level to be minimized.



AUDIO OUTPUT
DISTORTION MINIMIZE



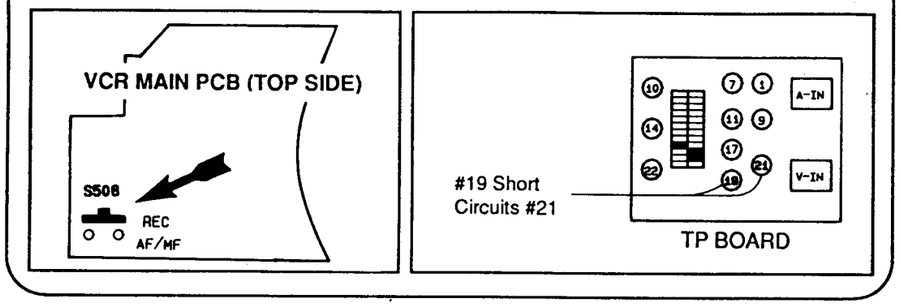
VCR MAIN PCB (TOP SIDE)

10-3-5. VIDEO Section

HOW TO RECORD

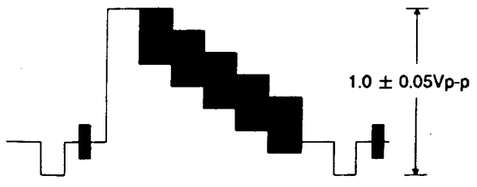
If you want to record at the VCR MODE.

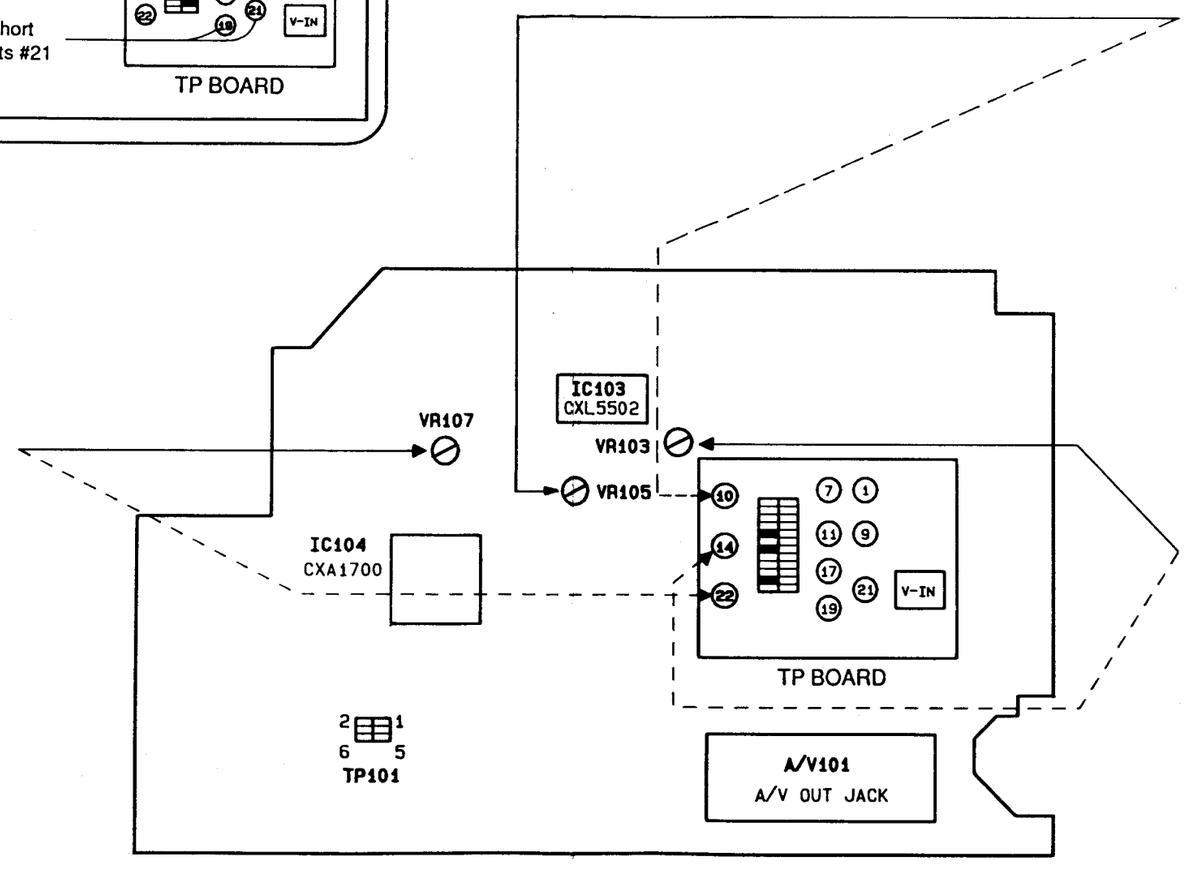
- Short-circurt between pin 19 and pin 21(TSET B) of TP Board.
- Press S508 (AF/MF) button.



1 AGC

1. "REC", 100% Color bar signal.
   (Input Method : Connect the video signal input cable to connector V-IN of TP Board)
2. Pin 22 of TP Board & VR107.
3. * Connect an oscilloscope to pin 22 of TP Board.
   * Adjust VR107 for 1.0 ± 0.05Vp-p from sync tip to white peak level.

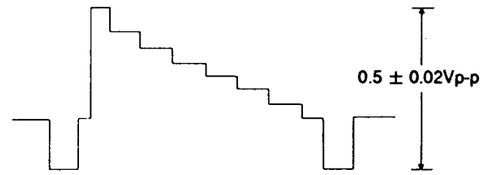




VCR MAIN PCB (TOP SIDE)

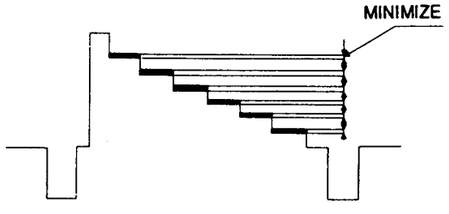
2 EMPHASIS INPUT LEVEL

1. "REC", 100% Color bar signal.
   (Input Method : Connect the video signal input cable to connector V-IN of TP Board)
2. Pin 10 of TP Board & VR105.
3. * Connect an oscilloscope to pin 10 of TP Board.
   * Adjust VR105 for 0.5 ± 0.02Vp-p from sync tip to white peak level.



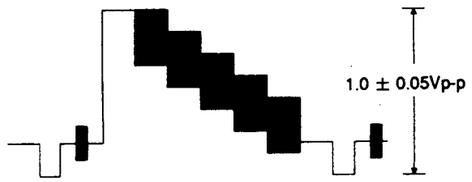
3 Y/C SEPARATION

1. "REC", 100% Color bar signal.
   (Input Method : Connect the video signal input cable to connector V-IN of TP Board)
2. Pin 14 of TP Board & VR103.
3. * Connect an oscilloscope to pin 14 of TP Board.



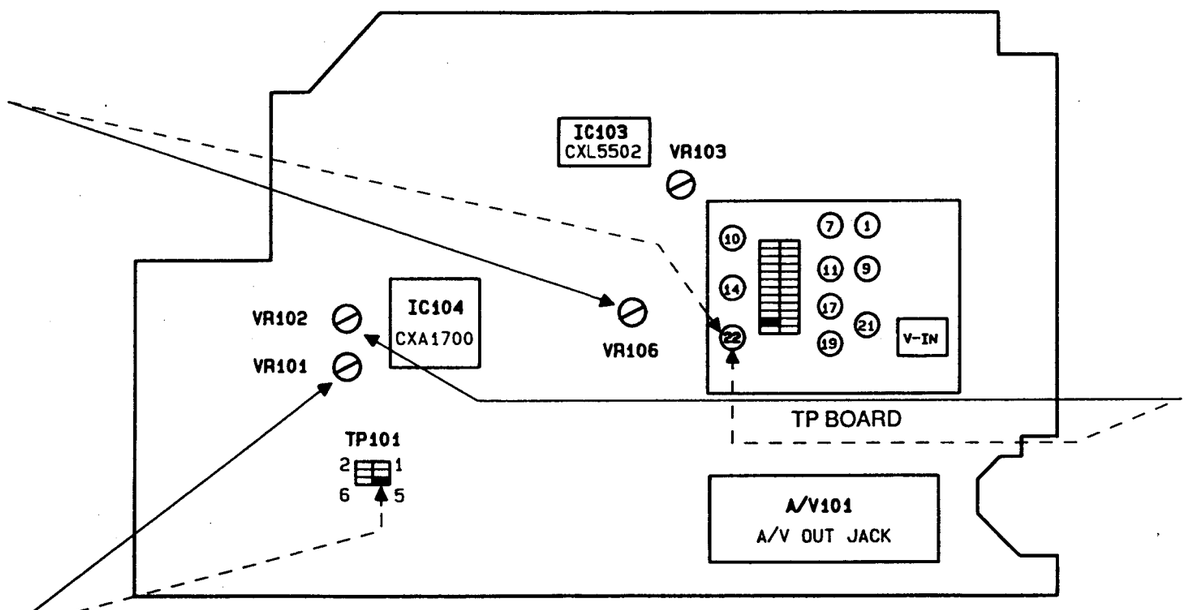
4 PB OUTPUT LEVEL

1. "PB", Alignment tape (Color bar).
2. Pin 22 of TP Board & VR106.
3. * Connect an oscilloscope to pin 22 of TP Board.
   * Adjust VR106 for 1.0 ± 0.05Vp-p from sync tip to white peak level.
   (The output jack must be connected to the monitor.)



5 Y-FM CARRIER FREQUENCY

1. "REC", No signal input.
2. Pin 5 of TP101 & VR101.
3. * Connect frequency probe to pin 5 of TP101.
   * Adjust VR101 so that the frequency is 4.39 ± 0.05MHz.



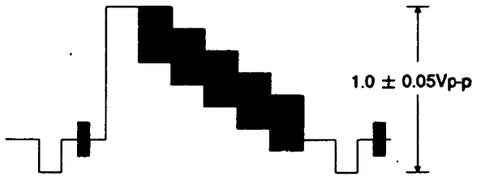
VCR MAIN PCB (TOP SIDE)

6 Y-FM DEVIATION

NOTE : Confirm that "PB OUTPUT LEVEL" and "Y FM CARRIER FREQUENCY" adjustment have been completed.

1. "REC → PB", 100% Color bar signal.
   (Input Method : Connect the video signal input cable to connector V-IN of TP Board)
2. Pin 22 of TP Board & VR102.
3. * Record the color bar signal.
   * Playback the recorded signal.
   * Confirm the playback output.
   (Specified value ; 1.0 ± 0.05Vp-p)
   * If the specified value is not satisfied, repeat *1 to 3 after turning VR102 in the following manner.

	Rotation direction of VR102
When larger than specified value	Counterclockwise ( )
When smaller than specified value	Clockwise ( )



11. P.C.BOARDS

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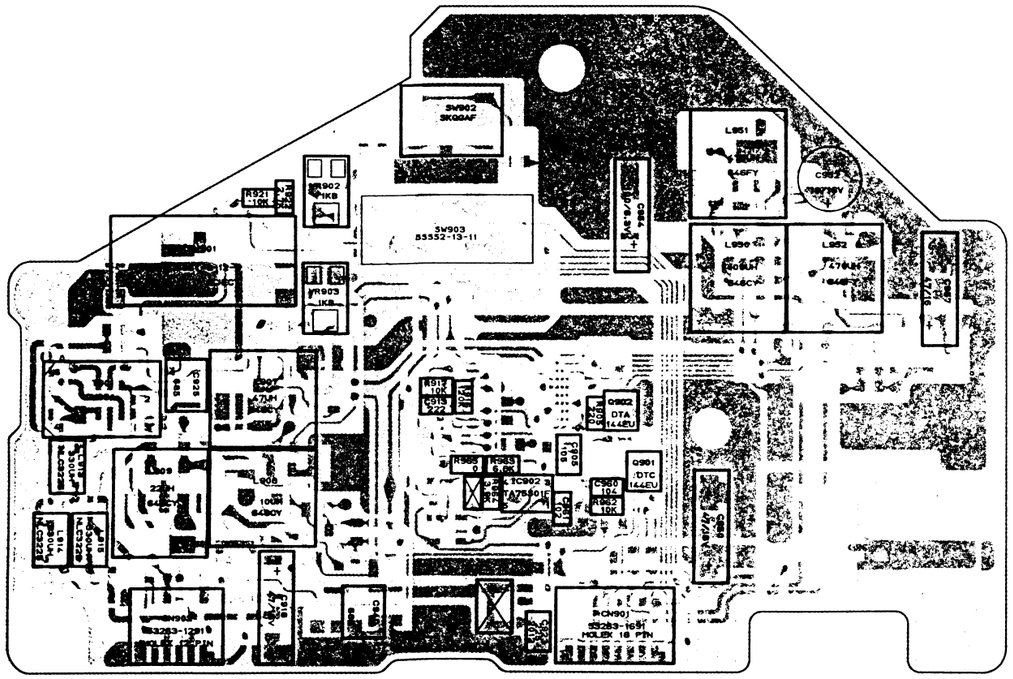
11-1. DC/DC CONVERTER (TOP SIDE)

: Pattern from the side which enables seeing

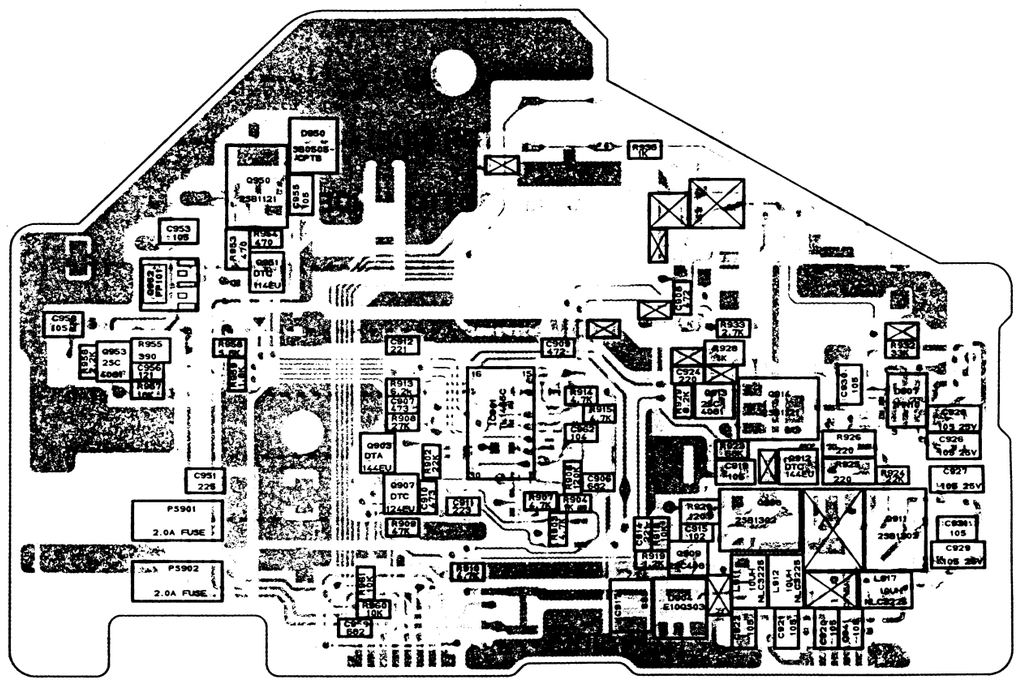
: Pattern of the rear side



11-2. DC/DC CONVERTER (BOTTOM SIDE)

: Pattern from the side which enables seeing

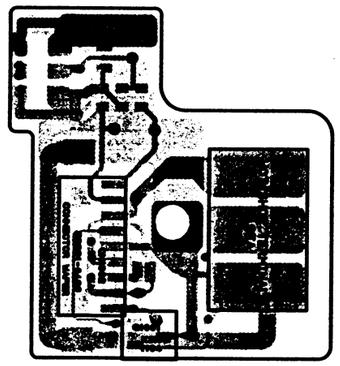
: Pattern of the rear side



11-3. HOT SHOE (TOP SIDE)

: Pattern from the side which enables seeing

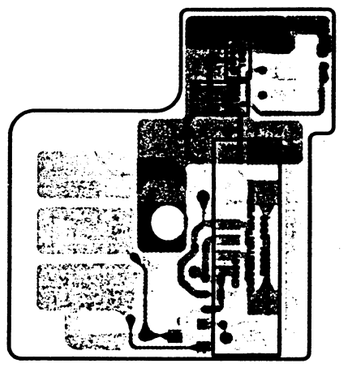
: Pattern of the rear side



11-4. HOT SHOE (BOTTOM SIDE)

: Pattern from the side which enables seeing

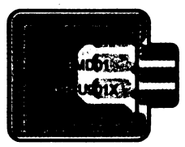
: Pattern of the rear side



11-5. REMOTE MODULE (TOP SIDE)

: Pattern from the side which enables seeing

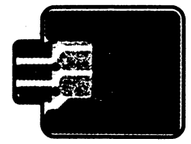
: Pattern of the rear side



11-6. REMOTE MODULE (BOTTOM SIDE)

: Pattern from the side which enables seeing

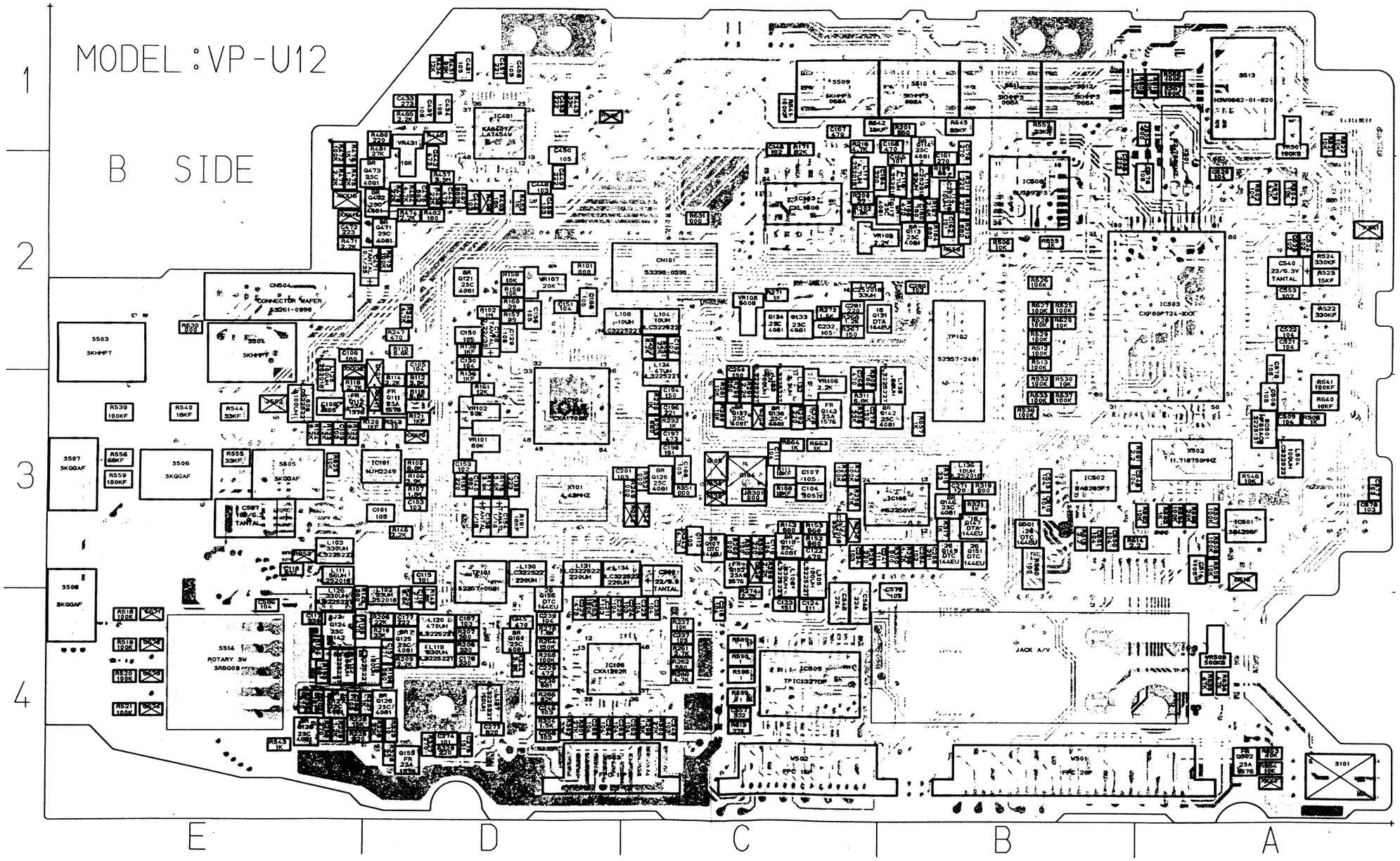
: Pattern of the rear side



11-7. MAIN (TOP SIDE)

: Pattem from the side which enables seeing

: Pattem of the rear side



LOCATION	COORDINATES
IC101	3-D
IC103	2-C
IC104	3-D
IC105	3-B
IC106	4-D
IC431	1-D
IC501	3-A
IC502	3-B
IC503	2-B
IC505	4-C
IC508	2-B
VR101	3-D
VR102	3-D
VR103	2-B
VR105	2-C
VR106	3-C
VR107	2-D
VR431	1-D
VR501	1-A
VR503	4-A

LOCATION	COORDINATES
L102	3-D
L103	3-E
L104	2-C
L105	3-C
L106	3-C
L108	2-C
L111	3-E
L112	4-E
L113	4-D
L114	2-B
L115	2-B
L116	2-B
L117	2-C
L119	4-D
L120	4-D
L123	2-C
L124	2-C
L125	2-E
L126	3-E
L127	3-C
L130	3-D
L131	3-D
L132	3-C
L133	3-D
L134	3-D
L135	3-B
L136	3-B
L137	4-D
L504	3-A
L506	3-E

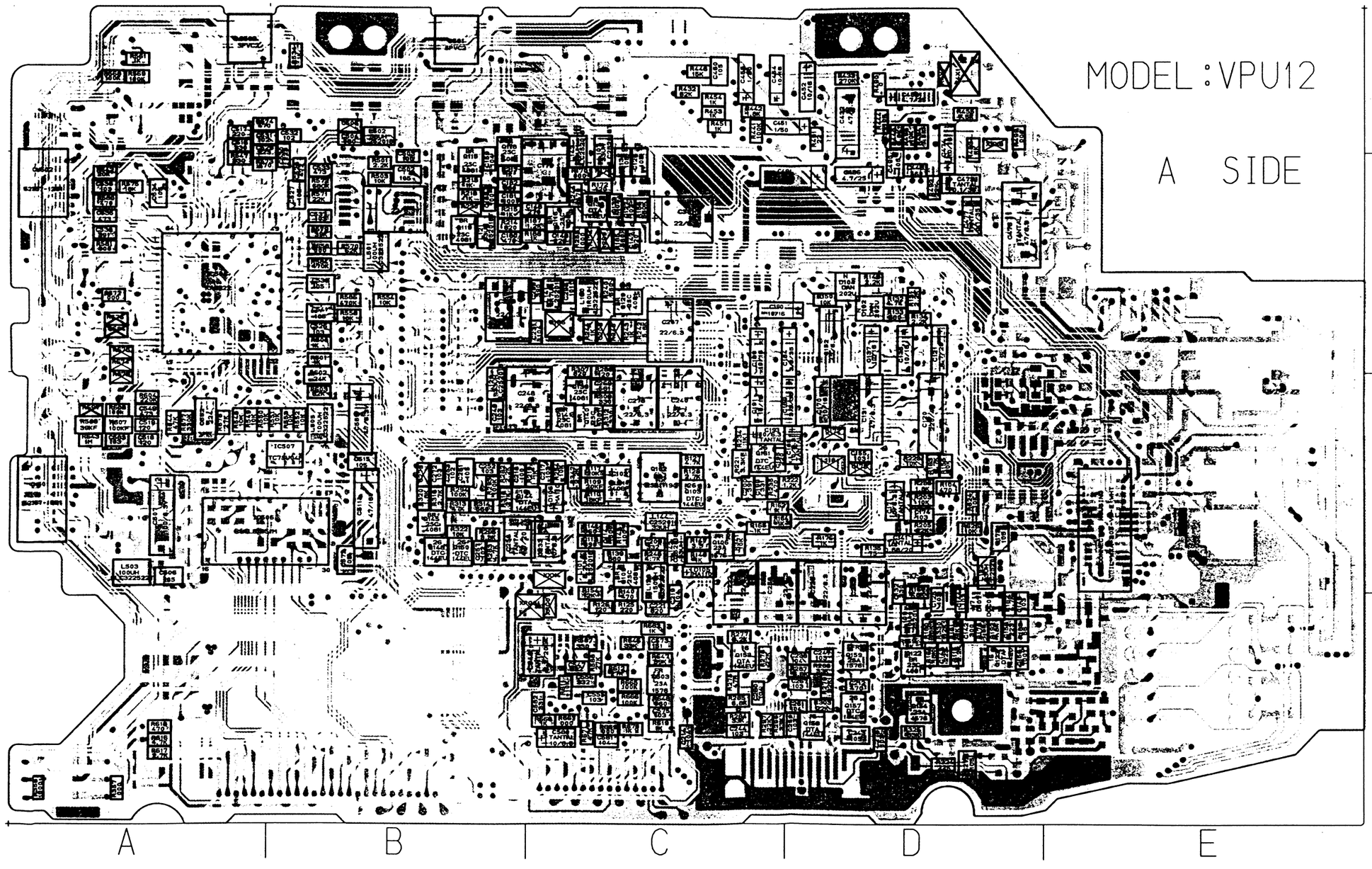
LOCATION	COORDINATES
Q107	3-C
Q110	3-C
Q111	3-D
Q114	1-B
Q117	2-B
Q121	2-D
Q124	4-E
Q125	4-D
Q126	4-D
Q127	4-E
Q128	4-E
Q133	2-C
Q134	2-C
Q137	3-C
Q138	3-C
Q142	3-B
Q143	3-C
Q146	3-B
Q147	3-B
Q149	3-B
Q151	3-B
Q152	3-C
Q155	4-D
Q156	4-D
Q160	4-D
Q471	2-D
Q472	2-D
Q473	2-D
Q501	3-B
Q502	4-A

LOCATION	COORDINATES
C128	2-D
C138	3-D
C154	3-D
C300	3-C
C471	2-D
C540	2-A
C545	3-C
C546	3-C
C567	3-E

11-8. MAIN (BOTTOM SIDE)

: Pattern from the side which enables seeing

: Pattern of the rear side



LOCATION	COORDINATES
IC102	3-C
IC504	2-B
IC506	3-A
IC507	3-B
L101	3-C
L107	1-C
L108	4-D
L118	3-D
L121	2-B
L122	3-D
L128	3-C
L129	2-B
L140	2-C
L141	2-C
L142	3-C
L143	1-C
L144	3-C
L501	2-B
L502	1-B
L503	3-B
L505	2-B

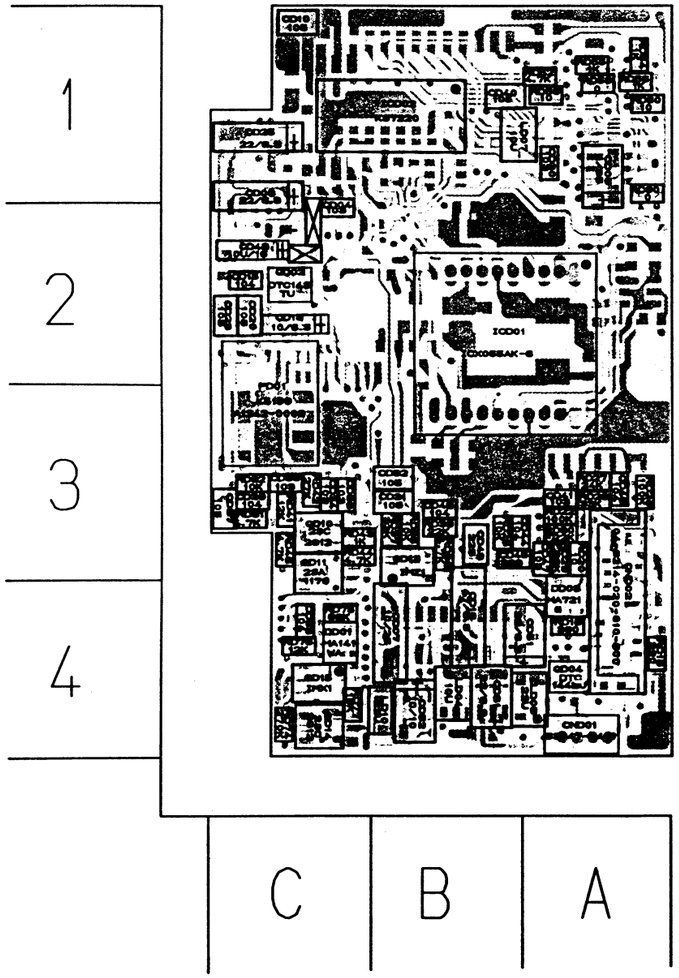
LOCATION	COORDINATES
Q102	3-C
Q103	3-C
Q106	3-C
Q109	3-C
Q115	1-B
Q116	2-C
Q118	1-B
Q119	2-B
Q122	4-D
Q123	4-D
Q129	2-C
Q130	2-C
Q136	2-C
Q139	3-C
Q140	3-C
Q141	3-C
Q144	3-B
Q145	3-B
Q146	3-B
Q150	3-B
Q153	4-C
Q154	4-D
Q157	4-D
Q158	4-D
Q159	3-D
Q161	3-C
Q503	4-C

LOCATION	COORDINATES
C120	3-D
C121	2-D
C131	3-D
C135	2-D
C137	2-D
C141	3-D
C152	2-D
C169	2-D
C170	3-D
C171	3-D
C179	2-C
C184	2-D
C185	3-D
C189	2-C
C190	2-C
C191	3-C
C193	3-C
C203	2-B
C207	2-C
C222	3-C
C226	3-D
C233	3-C
C240	3-C
C242	3-D
C248	3-B
C256	3-B
C258	3-C
C278	3-C
C301	2-C
C432	1-D
C436	2-D
C451	1-C
C452	1-D
C454	1-C
C455	1-C
C458	1-D
C473	2-D
C474	1-D
C476	2-D
C477	2-D
C491	2-D
C501	2-B
C507	3-A
C511	3-B
C544	4-C
C559	3-B
C580	4-C

11-9. DRIVE (TOP SIDE)

: Pattem from the side which enables seeing

: Pattem of the rear side



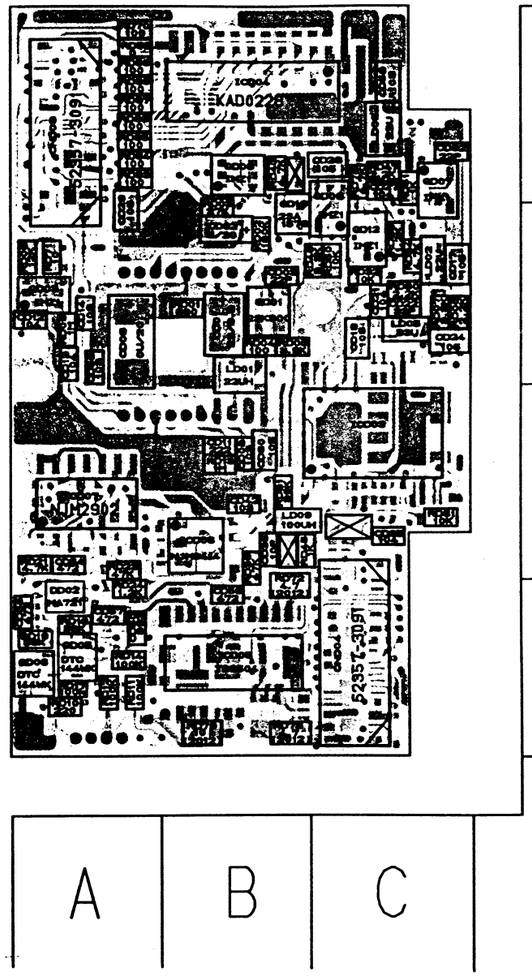
LOCATION	COORDINATES
CND01	4-A
CND02	4-A
DD01	4-C
DD02	4-A
FD01	3-C
ICD01	2-B
ICD02	1-B
LD03	4-A
LD04	4-B
LD07	1-B
LD10	4-B
QD02	2-C
QD04	4-A
QD10	3-C
QD11	3-C
QD13	3-B
QD14	4-C
QD15	4-C

LOCATION	COORDINATES
CD02	2-C
CD05	1-A
CD07	4-B
CD09	1-C
CD10	1-C
CD15	2-C
CD16	4-B
CD18	2-C
CD20	2-C
CD23	2-C
CD25	1-C
CD30	1-A
CD31	3-B
CD32	3-B
CD33	3-C
CD34	3-C
CD37	3-C
CD38	3-C
CD39	3-C
CD40	1-B
CD41	3-A
CD43	3-B
CD44	3-B
CD45	3-B
CD46	3-A
CD47	3-A
CD48	2-C
CD49	3-B
CD51	4-A
CD52	4-B
CD53	4-C
CD61	4-B

11-10. DRIVE (BOTTOM SIDE)

: Pattem from the side which enables seeing

: Pattem of the rear side



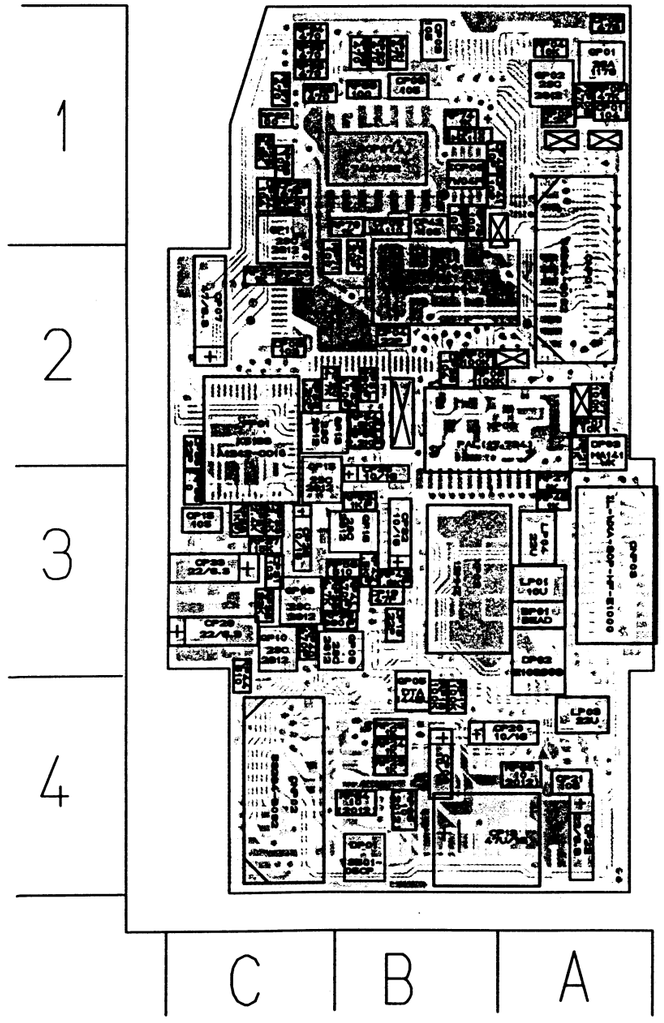
LOCATION	COORDINATES
CND03	1-A
CND04	4-C
DD02	4-A
LD01	2-B
LD02	2-C
LD05	2-C
LD06	1-C
LD09	3-B
ICD03	3-C
ICD04	1-B
ICD05	4-B
ICD06	3-B
ICD07	3-A
QD01	2-B
QD03	2-A
QD05	4-A
QD06	4-A
QD07	1-C
QD08	1-B
QD09	2-C
QD12	2-C
QD16	2-B

LOCATION	COORDINATES
CD01	2-B
CD03	2-B
CD06	2-A
CD08	3-B
CD11	3-B
CD12	2-A
CD13	2-A
CD14	2-A
CD17	2-C
CD19	2-C
CD21	2-C
CD22	2-C
CD24	2-C
CD27	1-C
CD28	1-C
CD29	2-A
CD35	3-C
CD36	3-B
CD42	3-B
CD50	4-A
CD54	3-A
CD55	4-A
CD56	4-B
CD57	4-A
CD58	2-A
CD59	1-C
CD60	3-B
CD62	1-C

11-11. PROCESS (TOP SIDE)

: Pattern from the side which enables seeing

: Pattern of the rear side



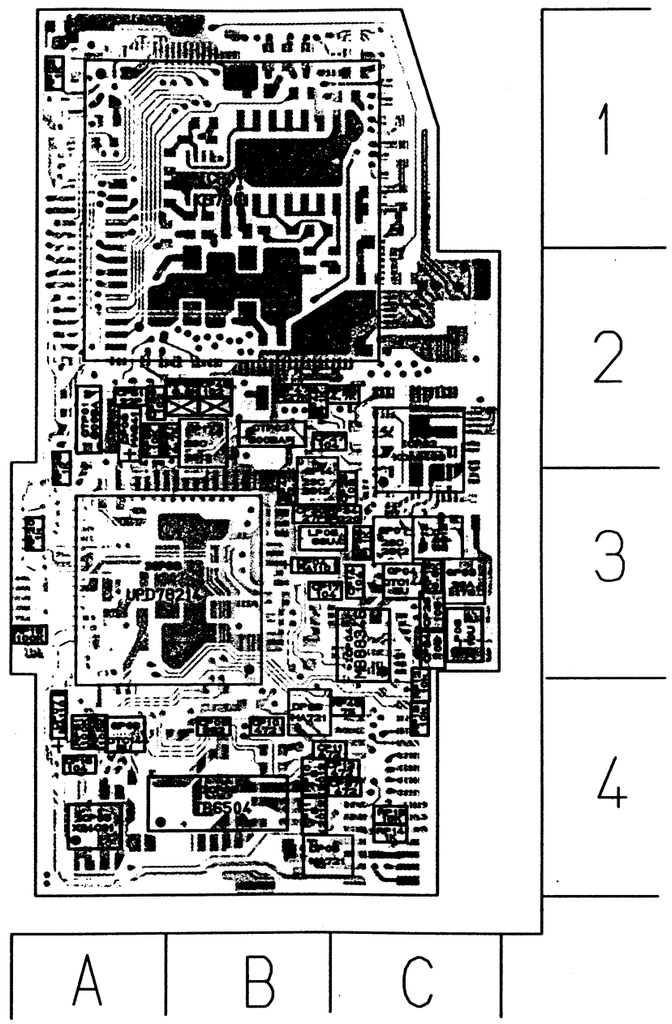
LOCATION	COORDINATES
CNP01	2-A
CNP02	4-C
CNP03	3-A
DP01	4-B
DP02	3-A
DP03	2-A
DP09	1-B
DP10	1-B
FP01	2-C
ICP07	1-B
ICP08	1-B
LP01	3-A
LP03	4-A
LP04	3-A
QP01	1-A
QP02	1-A
QP05	4-B
QP08	3-C
QP09	3-B
QP10	3-C
QP11	1-C
QP13	2-C
QP15	3-C
QP16	3-B
XP01	2-B
XP02	3-B
XP03	2-B

LOCATION	COORDINATES
CP01	1-A
CP02	1-B
CP03	1-B
CP04	2-B
CP05	1-A
CP06	2-C
CP07	2-C
CP08	4-B
CP13	4-A
CP15	3-C
CP18	3-B
CP19	3-B
CP20	4-A
CP21	4-A
CP22	4-A
CP23	1-C
CP24	1-C
CP28	3-C
CP29	3-C
CP31	3-C
CP32	3-B
CP33	3-C
CP35	2-C
CP36	3-B
CP38	2-B
CP41	1-B
CP42	1-B
CP43	1-B
CP44	2-B

11-12. PROCESS (BOTTOM SIDE)

: Pattern from the side which enables seeing

: Pattern of the rear side



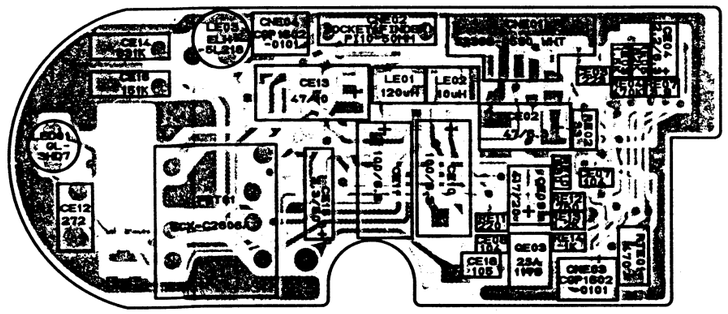
LOCATION	COORDINATES
CTP01	2-A
CTP02	2-B
DP04	3-B
DP05	4-C
DP06	4-B
DP07	4-A
DP08	2-A
ICP01	1-B
ICP02	2-C
ICP03	4-B
ICP04	3-C
ICP05	4-A
ICP06	3-B
LP05	3-B
LP06	3-C
QP03	3-C
QP04	3-C
QP06	4-A
QP07	3-C
QP12	3-C
QP14	3-B
QP17	2-B

LOCATION	COORDINATES
CP09	4-B
CP10	4-B
CP11	4-C
CP12	4-C
CP14	3-C
CP16	4-A
CP17	3-B
CP25	3-C
CP26	3-C
CP27	2-B
CP30	3-B
CP34	3-C
CP37	4-C
CP39	2-A
CP40	2-B
CP51	2-A

11-13. EVF (TOP SIDE)

: Pattem from the side which enables seeing

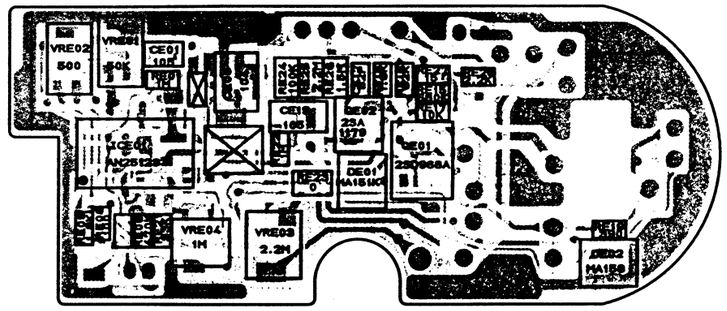
: Pattem of the rear side



11-14. EVF (BOTTOM SIDE)

: Pattem from the side which enables seeing

: Pattem of the rear side



12. BLOCK DIAGRAMS

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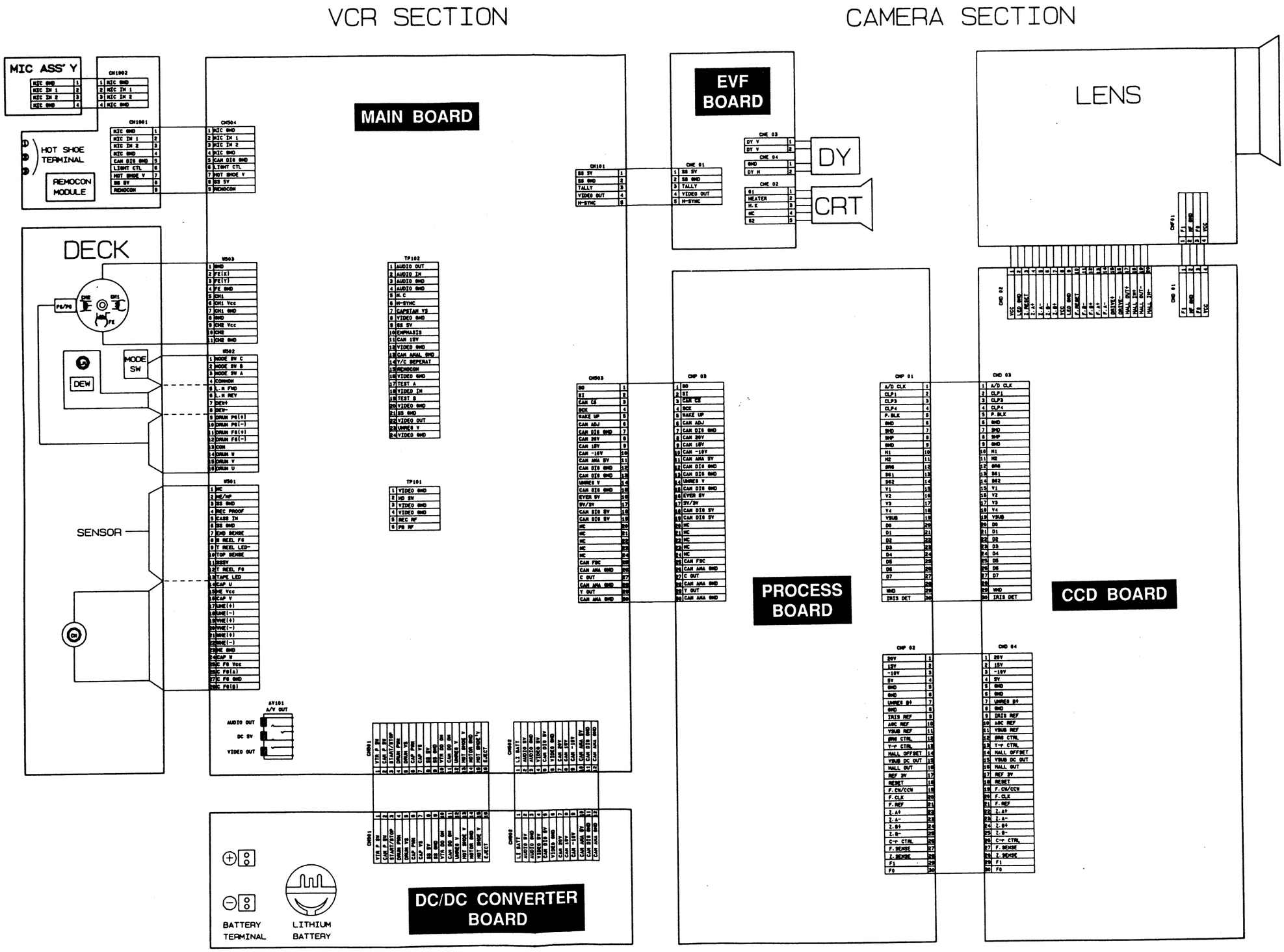
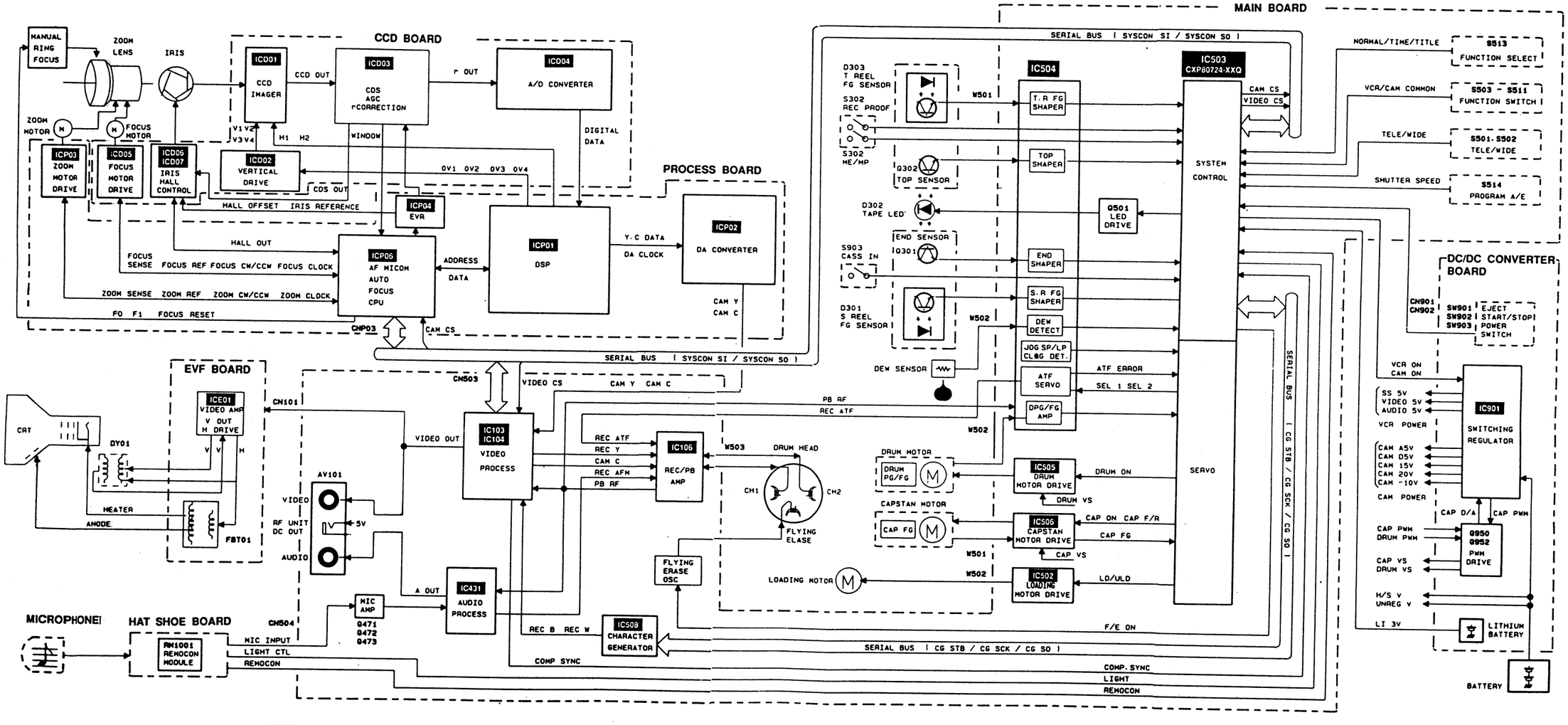
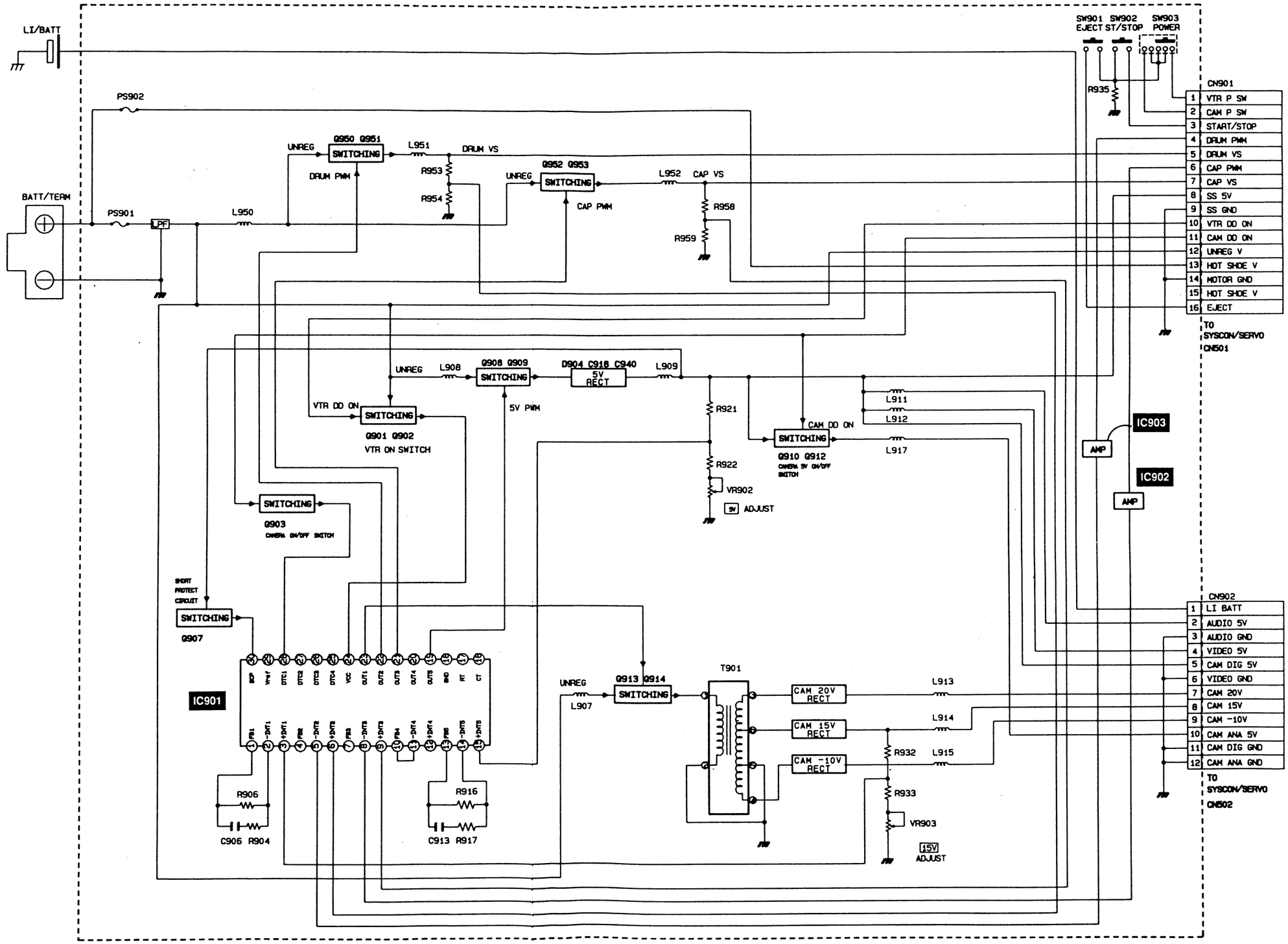
12-1. TOTAL WIRING DIAGRAM



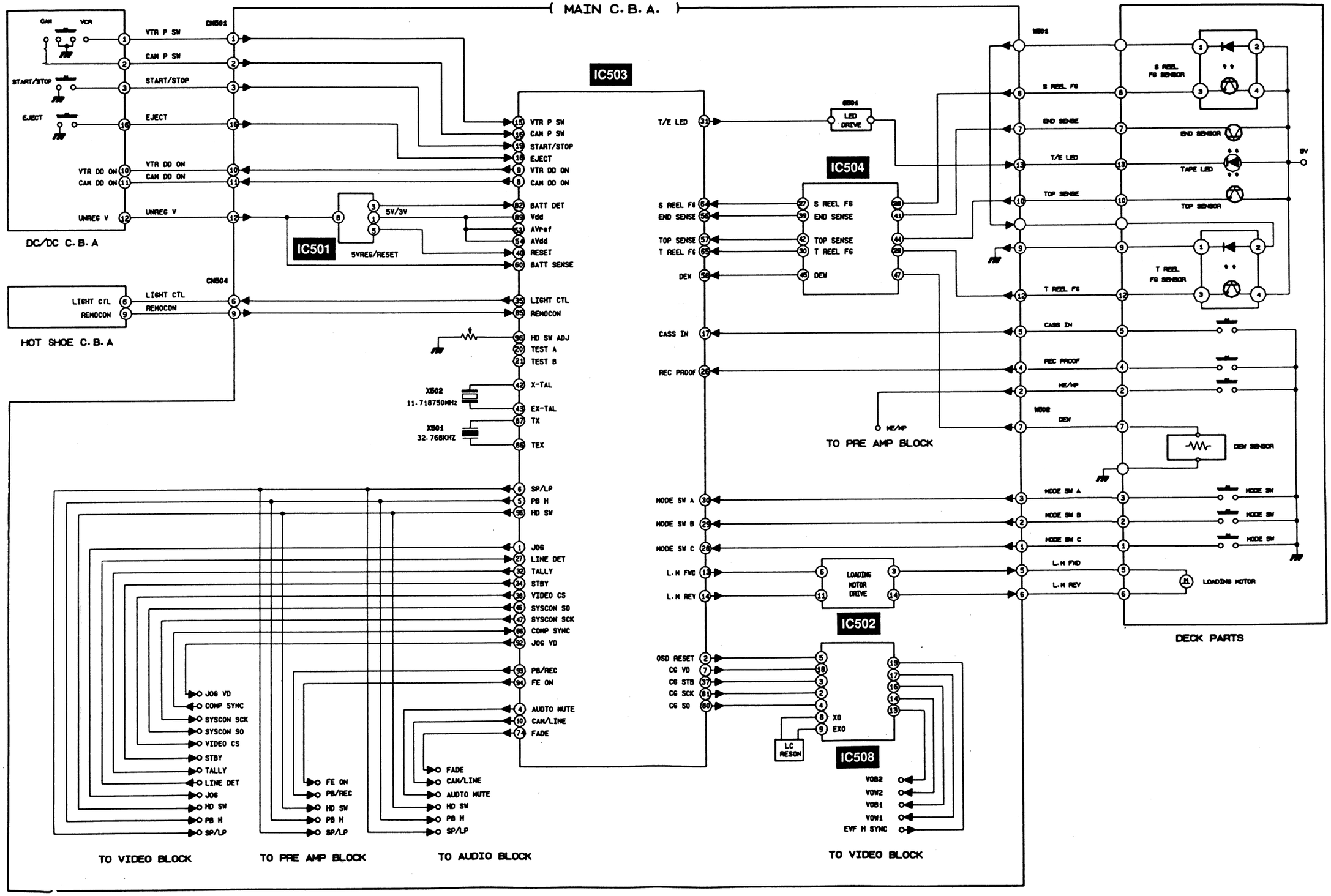
12-2. OVERALL BLOCK DIAGRAM



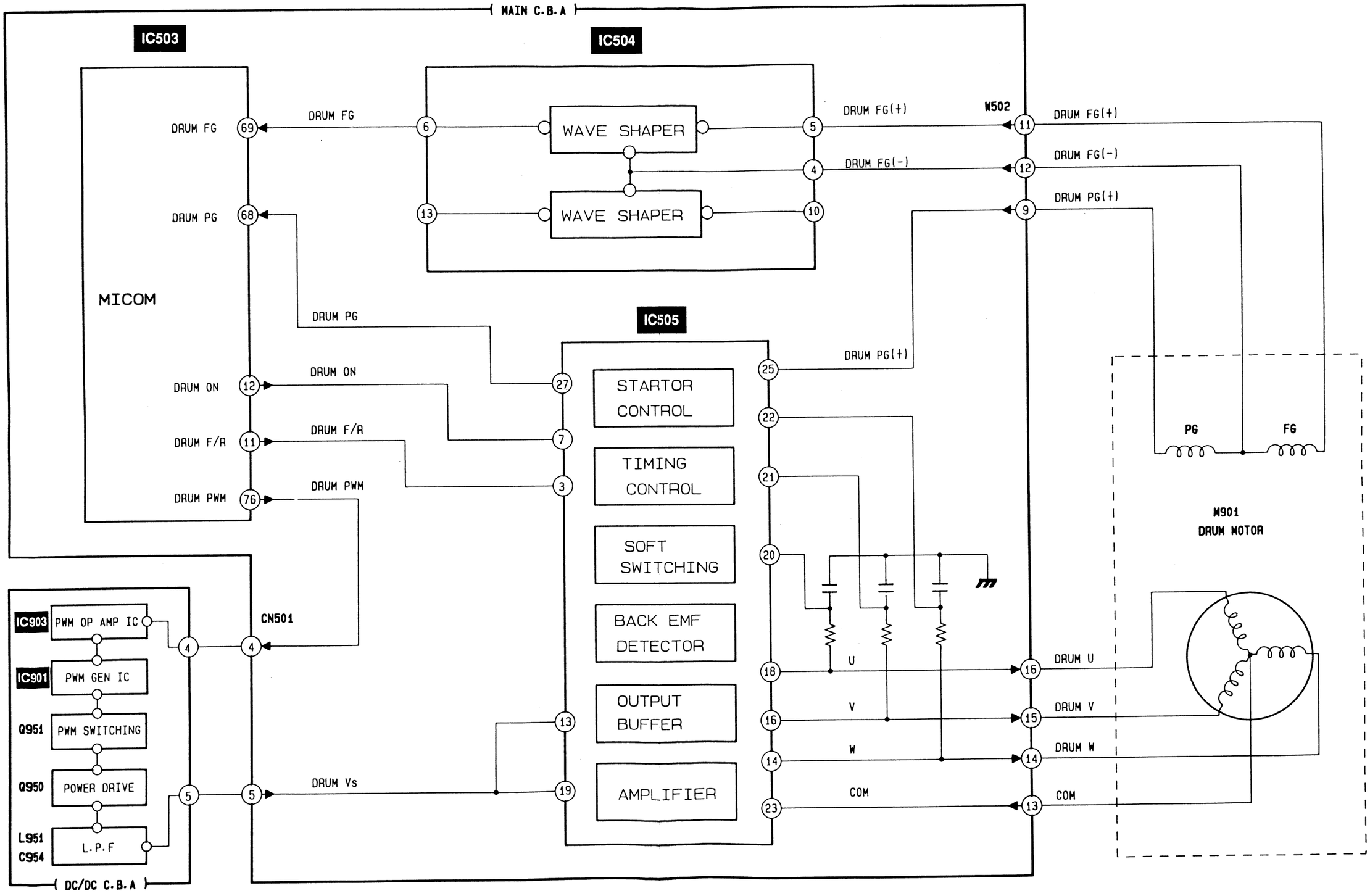
12-3. DC/DC CONVERTER



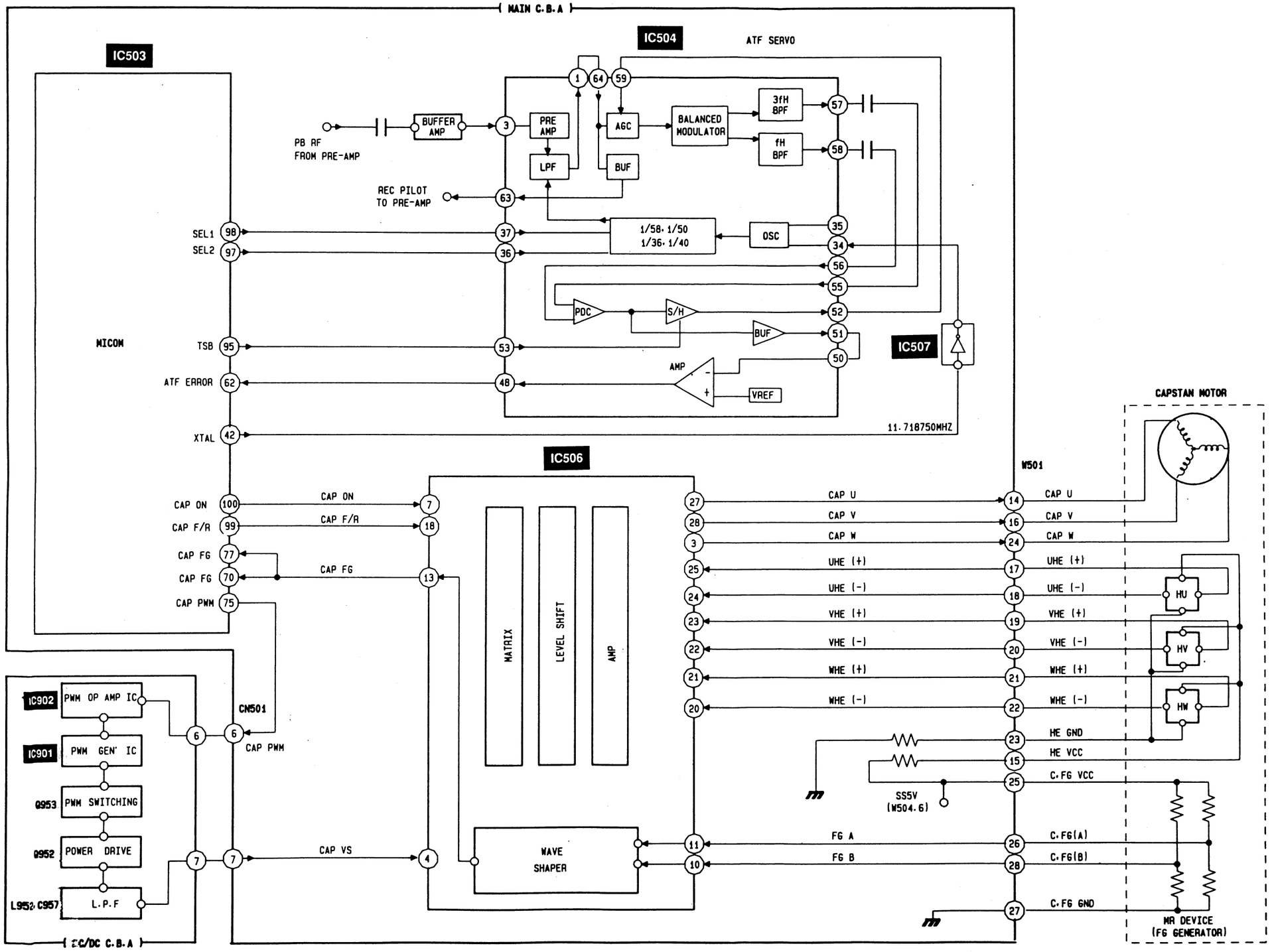
12-4. SYSTEM CONTROL



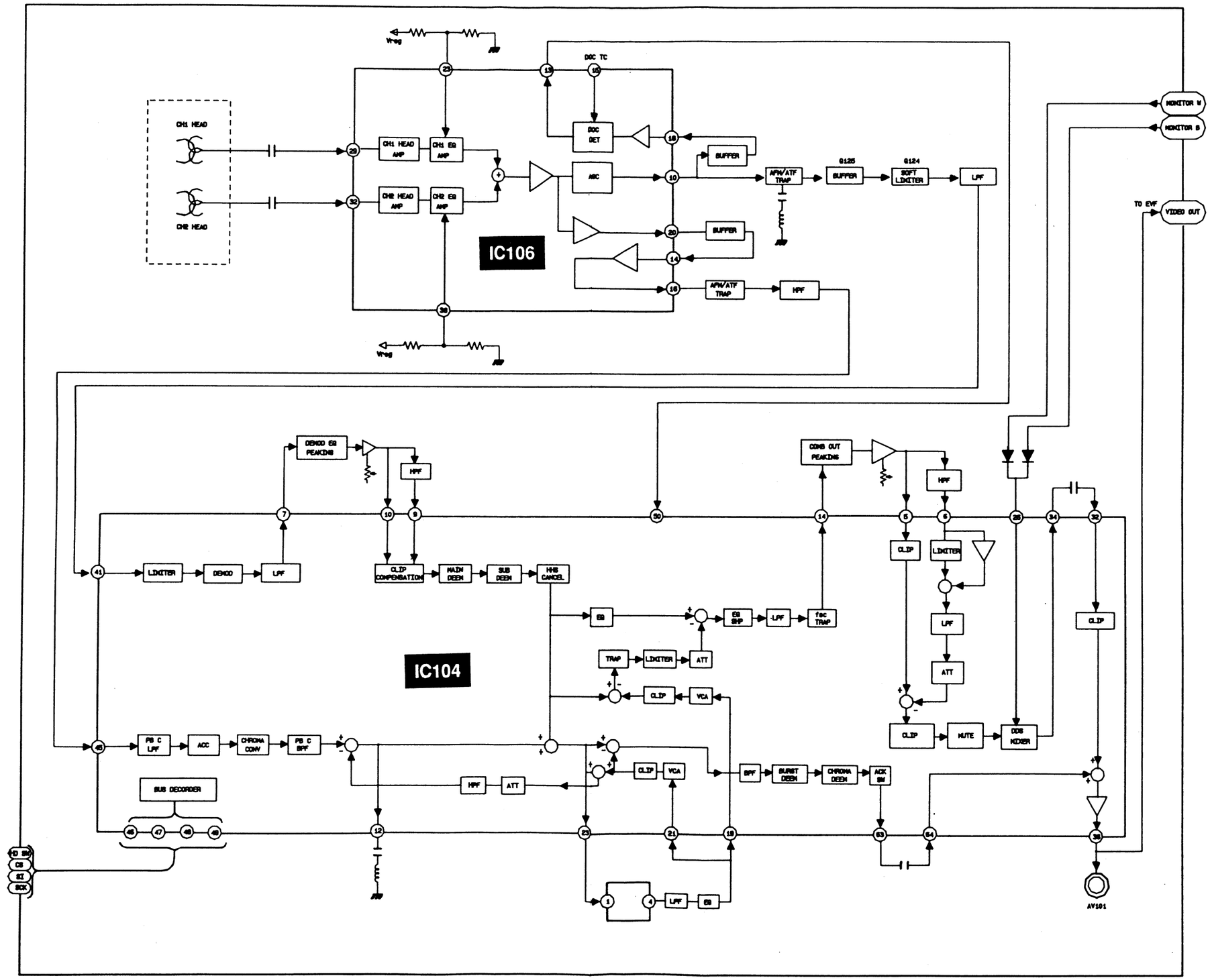
12-5. DRUM SERVO



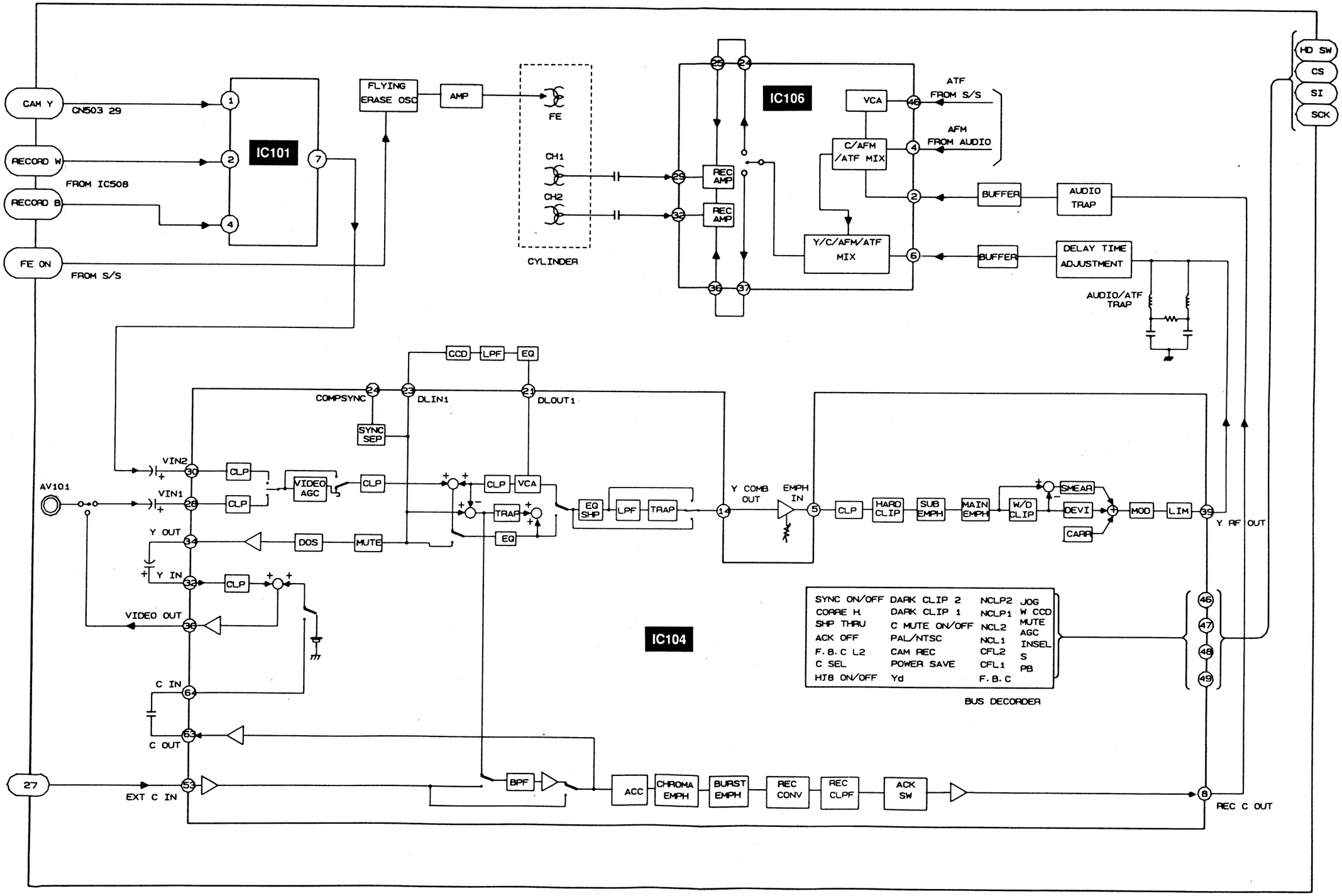
12-6. CAPSTAN SERVO



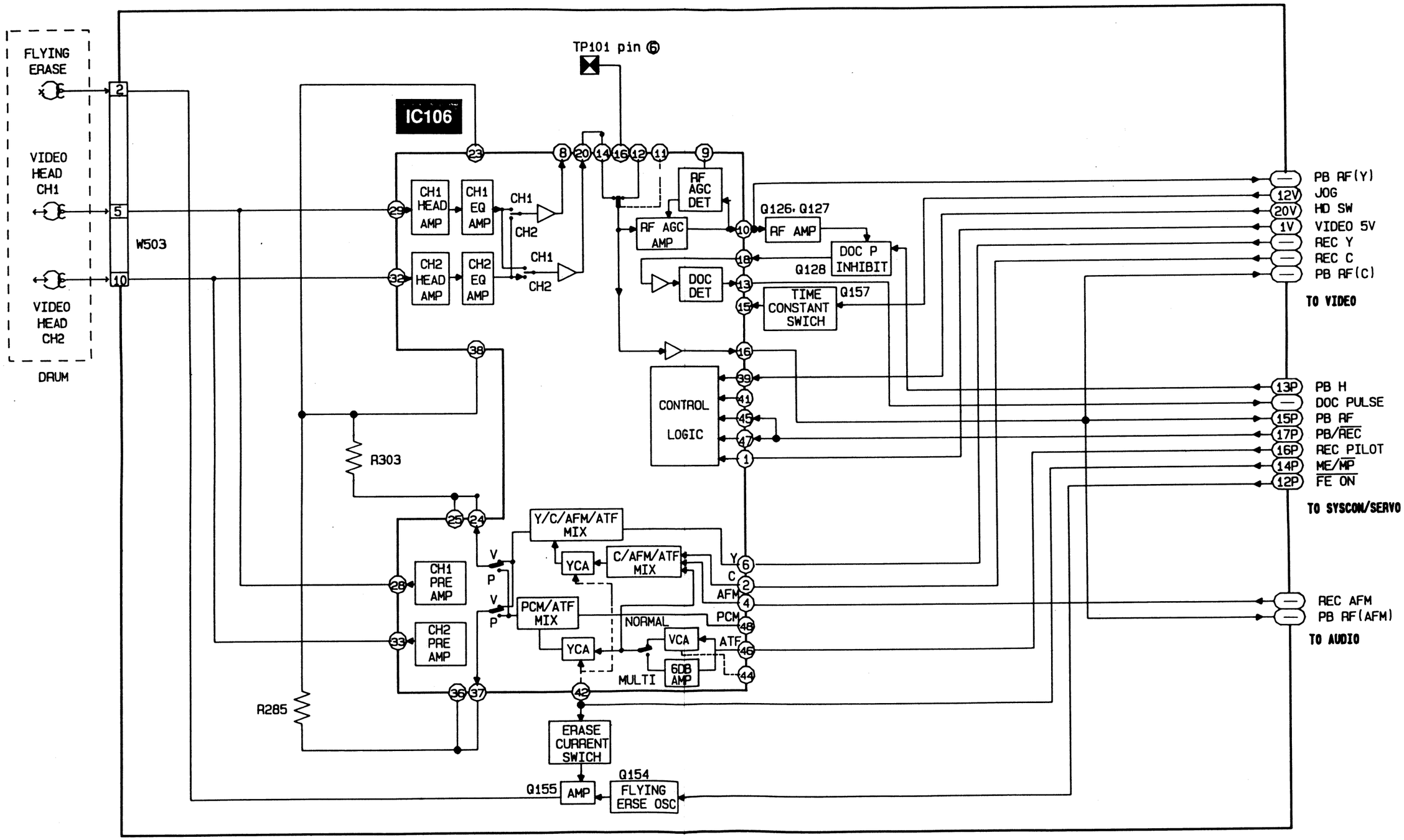
12-7. VIDEO PLAYBACK



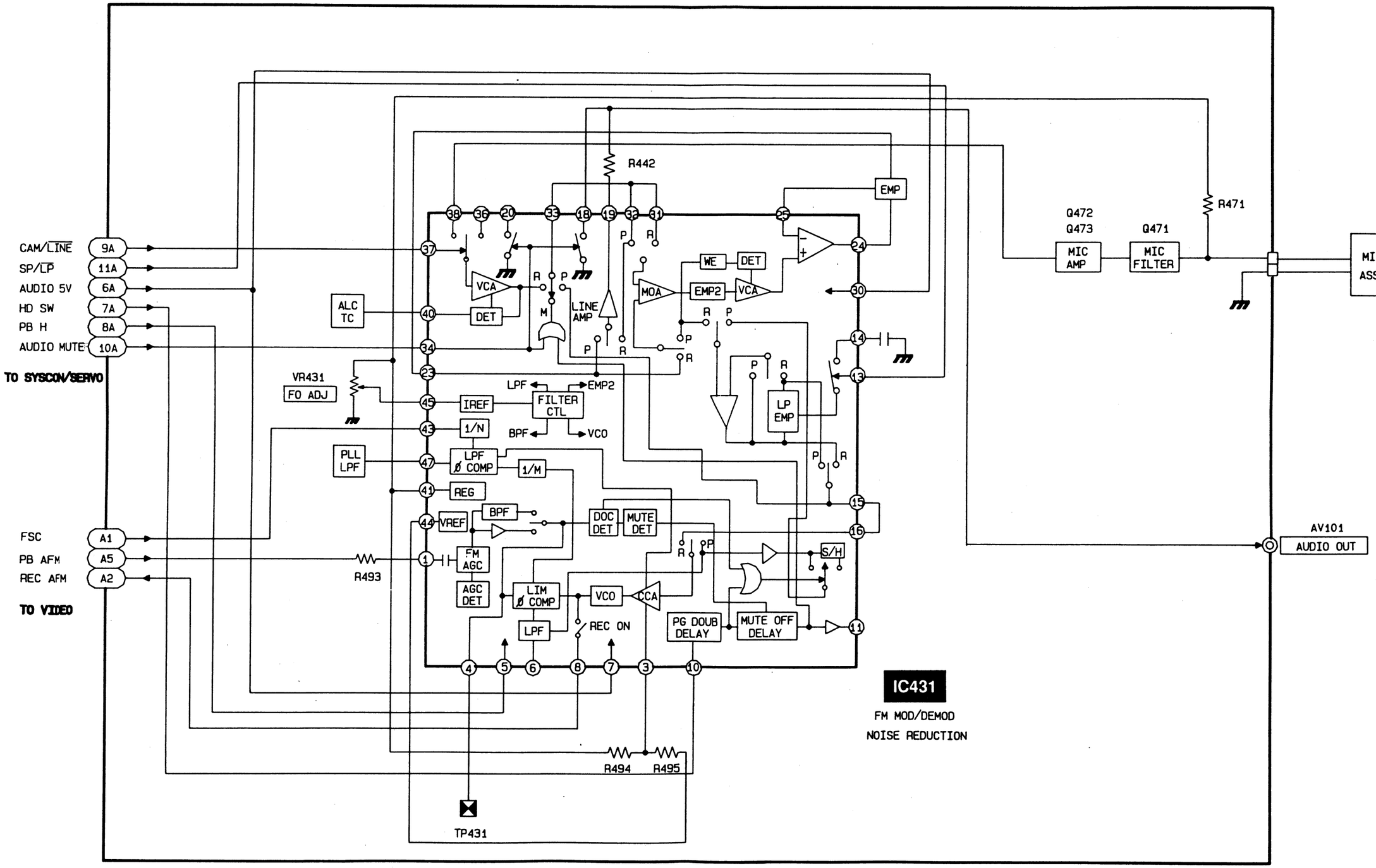
12-8. VIDEO RECORD



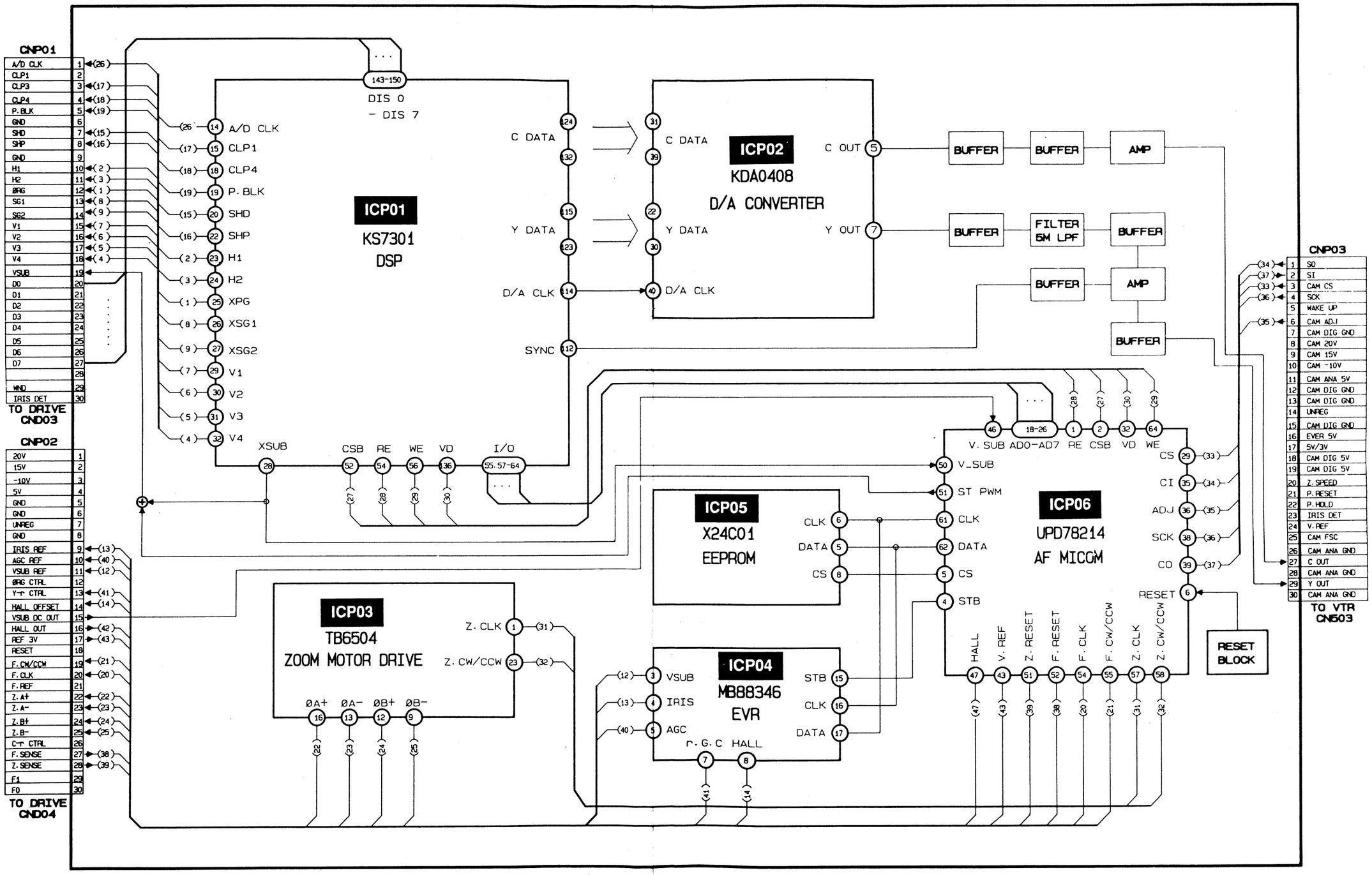
12-9. PRE AMP


FLYING ERASE
VIDEO HEAD CH1
VIDEO HEAD CH2
DRUM
W503
IC106
TP101 pin ⑥
CH1 HEAD AMP
CH1 EQ AMP
CH2 HEAD AMP
CH2 EQ AMP
RF AGC DET
RF AGC AMP
RF AMP
Q126, Q127
DOC P INHIBIT
Q128
DOC DET
TIME CONSTANT SWICH
Q157
CONTROL LOGIC
R303
R285
Y/C/AFM/ATF MIX
YCA
C/AFM/ATF MIX
CH1 PRE AMP
CH2 PRE AMP
PCM/ATF MIX
NORMAL
VCA
6DB AMP
MULTI
ERASE CURRENT SWICH
Q154
Q155
AMP
FLYING ERASE OSC
PB RF(Y)
JOG
HD SW
VIDEO 5V
REC Y
REC C
PB RF(C)
TO VIDEO
PB H
DOC PULSE
PB RF
PB/REC
REC PILOT
ME/MP
FE ON
TO SYSCON/SERVO
REC AFM
PB RF(AFM)
TO AUDIO

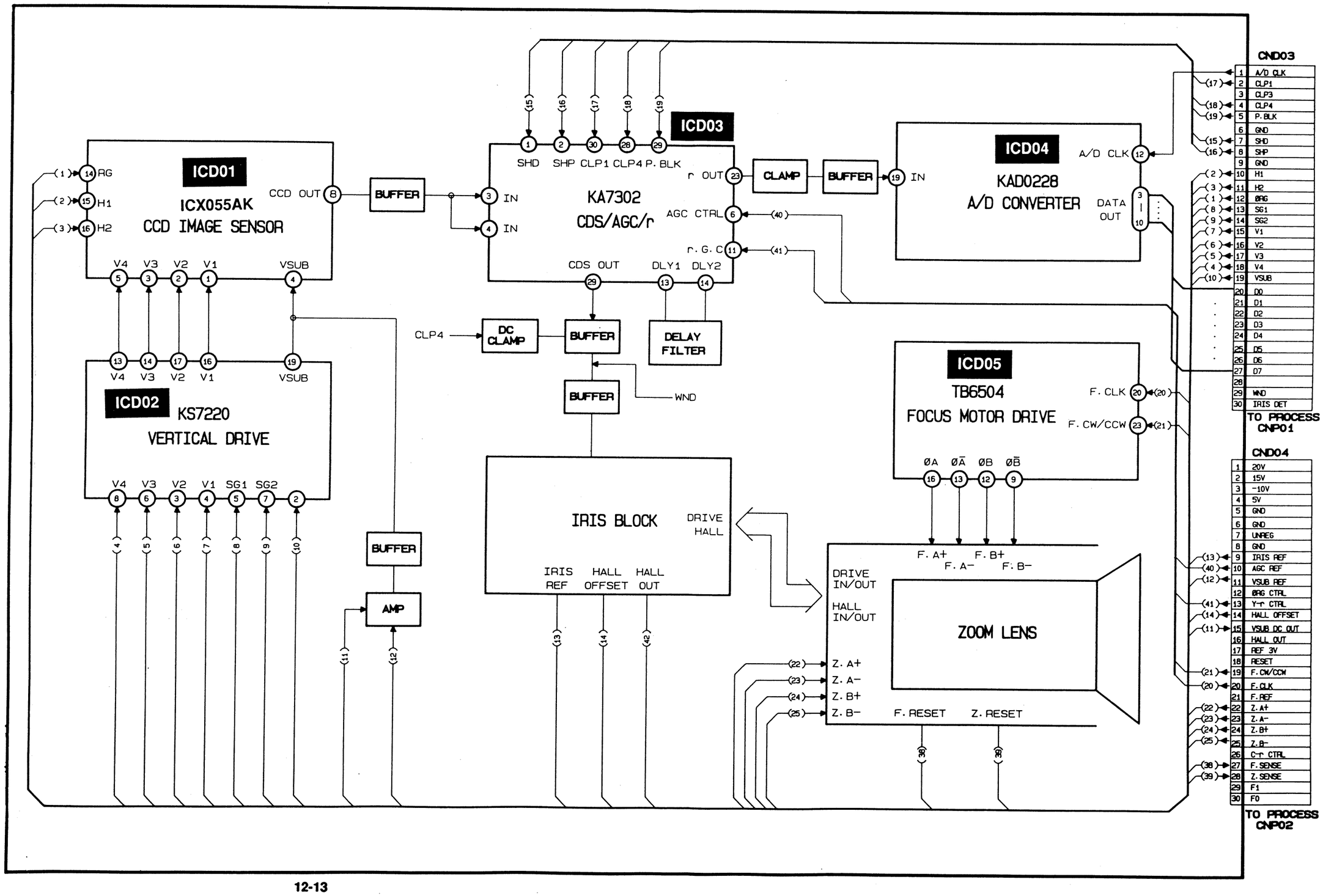
12-10. AUDIO


CAM/LINE
SP/LP
AUDIO 5V
HD SW
PB H
AUDIO MUTE
9A
11A
6A
7A
8A
10A
TO SYSCON/SERVO
FSC
PB AFM
REC AFM
A1
A5
A2
TO VIDEO
R442
R493
R494
R495
TP431
VR431
FO ADJ
ALC TC
LINE AMP
VCA
DET
MOA
EMP2
WE
DET
EMP
LP EMP
LPF
EMP2
IREF
FILTER CTL
1/N
BPF
VCO
PLL LPF
LPF Ø COMP
1/M
REG
VREF
BPF
DOC DET
MUTE DET
FM AGC
AGC DET
LIM Ø COMP
VCO
CCA
LPF
REC ON
PG DOUB DELAY
MUTE OFF DELAY
S/H
Q472
Q473
MIC AMP
Q471
MIC FILTER
R471
MIC ASSY
AV101
AUDIO OUT
IC431
FM MOD/DEMOD
NOISE REDUCTION

12-11. PROCESS



12-12. CCD


ICD01
ICX055AK
CCD IMAGE SENSOR
RG
H1
H2
CCD OUT
V4 V3 V2 V1
VSUB
BUFFER
ICD02
KS7220
VERTICAL DRIVE
V4 V3 V2 V1 SG1 SG2
ICD03
KA7302
CDS/AGC/r
SHD SHP CLP1 CLP4 P. BLK
IN
r OUT
AGC CTRL
r. G. C
CDS OUT
DLY1 DLY2
CLAMP
BUFFER
DC CLAMP
CLP4
DELAY FILTER
WND
ICD04
KAD0228
A/D CONVERTER
A/D CLK
DATA OUT
ICD05
TB6504
FOCUS MOTOR DRIVE
F. CLK
F. CW/CCW
ØA ØĀ ØB ØB̄
IRIS BLOCK
DRIVE HALL
IRIS REF
HALL OFFSET
HALL OUT
AMP
DRIVE IN/OUT
HALL IN/OUT
F. A+ F. A− F. B+ F. B−
ZOOM LENS
Z. A+ Z. A− Z. B+ Z. B−
F. RESET Z. RESET
CND03
A/D CLK
CLP1
CLP3
CLP4
P. BLK
GND
SHD
SHP
GND
H1
H2
ØRG
SG1
SG2
V1
V2
V3
V4
VSUB
D0 D1 D2 D3 D4 D5 D6 D7
WND
IRIS DET
TO PROCESS CNP01
CND04
20V
15V
−10V
5V
GND
GND
UNREG
GND
IRIS REF
AGC REF
VSUB REF
ØRG CTRL
Y-r CTRL
HALL OFFSET
VSUB DC OUT
HALL OUT
REF 3V
RESET
F. CW/CCW
F. CLK
F. REF
Z. A+
Z. A−
Z. B+
Z. B−
C-r CTRL
F. SENSE
Z. SENSE
F1
F0
TO PROCESS CNP02

13. SCHEMATIC DIAGRAMS

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	* SEMICONDUCTORS * BLOCK IDENTIFICATION OF MAIN PCB	
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13-5.	AUDIO	13-10
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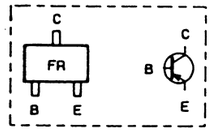
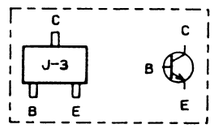
13-7.	DECK FPC	13-11
13-8.	CCD	13-12
13-9.	PROCESS	13-14
13-10.	EVF	13-16

* SEMICONDUCTORS

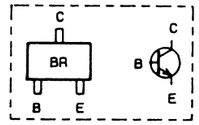
2SA1576



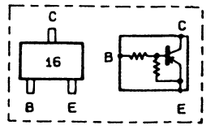
2SC3142



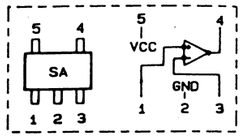
2SC4081



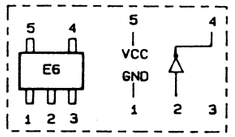
DTA144EU



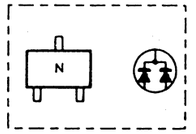
TA75501F



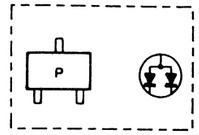
TC7SU04F



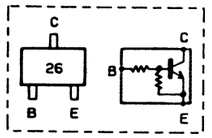
DAN202U



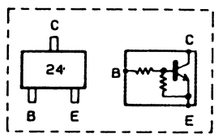
DAP202U



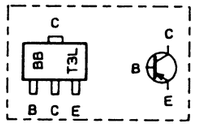
DTC144EU



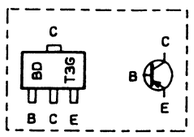
DTC114EU



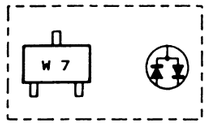
2SB1119



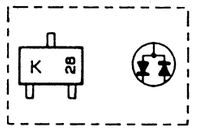
2SB1121



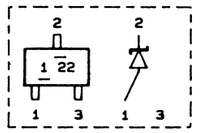
DCC010



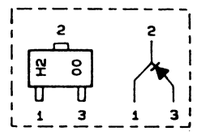
DA204K



RD12M



E10QS03



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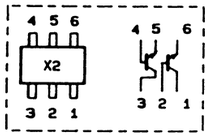

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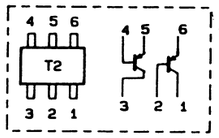

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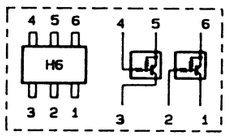

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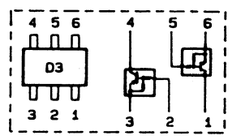

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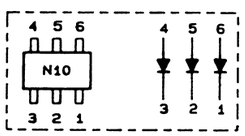

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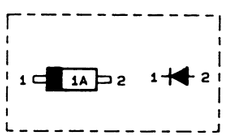
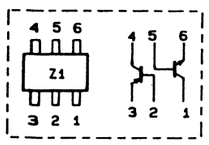
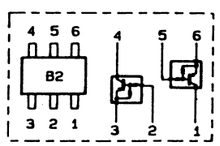


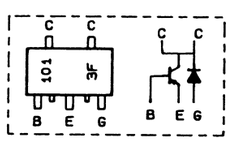
UMZ1



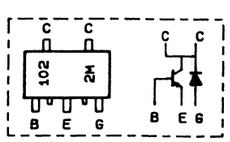
IMB2



FP101

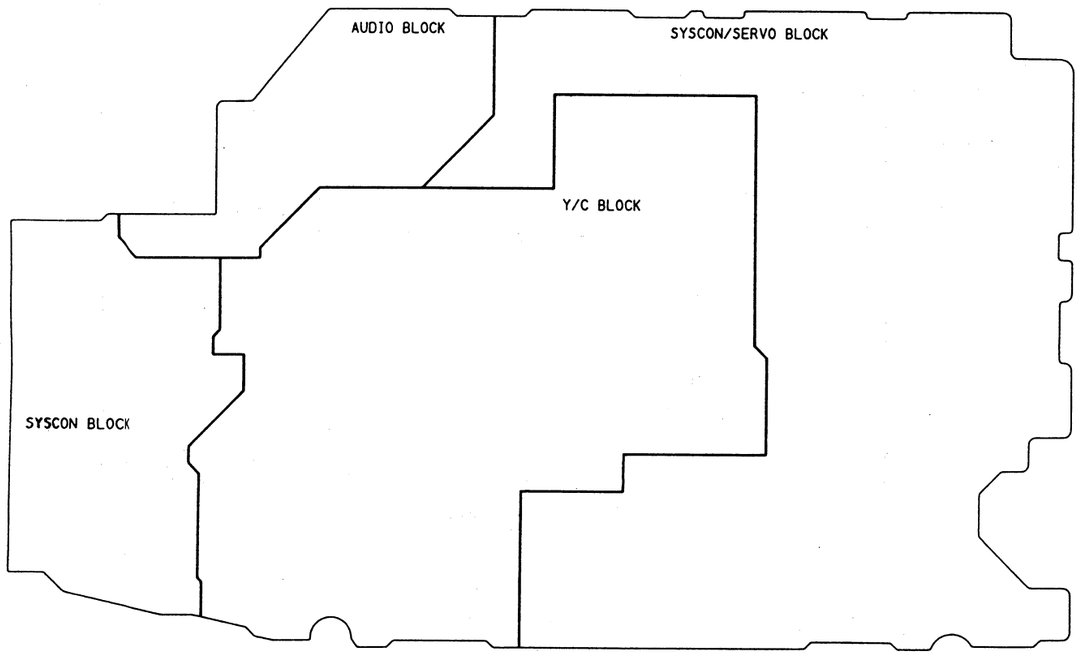


FP102

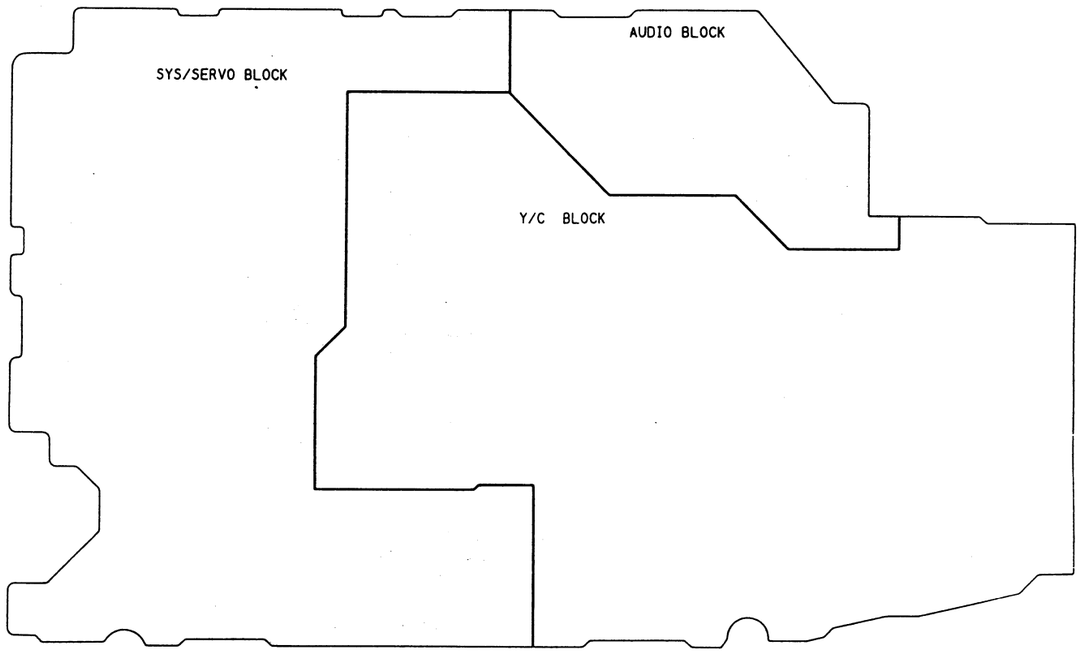


* BLOCK IDENTIFICATION OF MAIN PCB

(TOP SIDE)

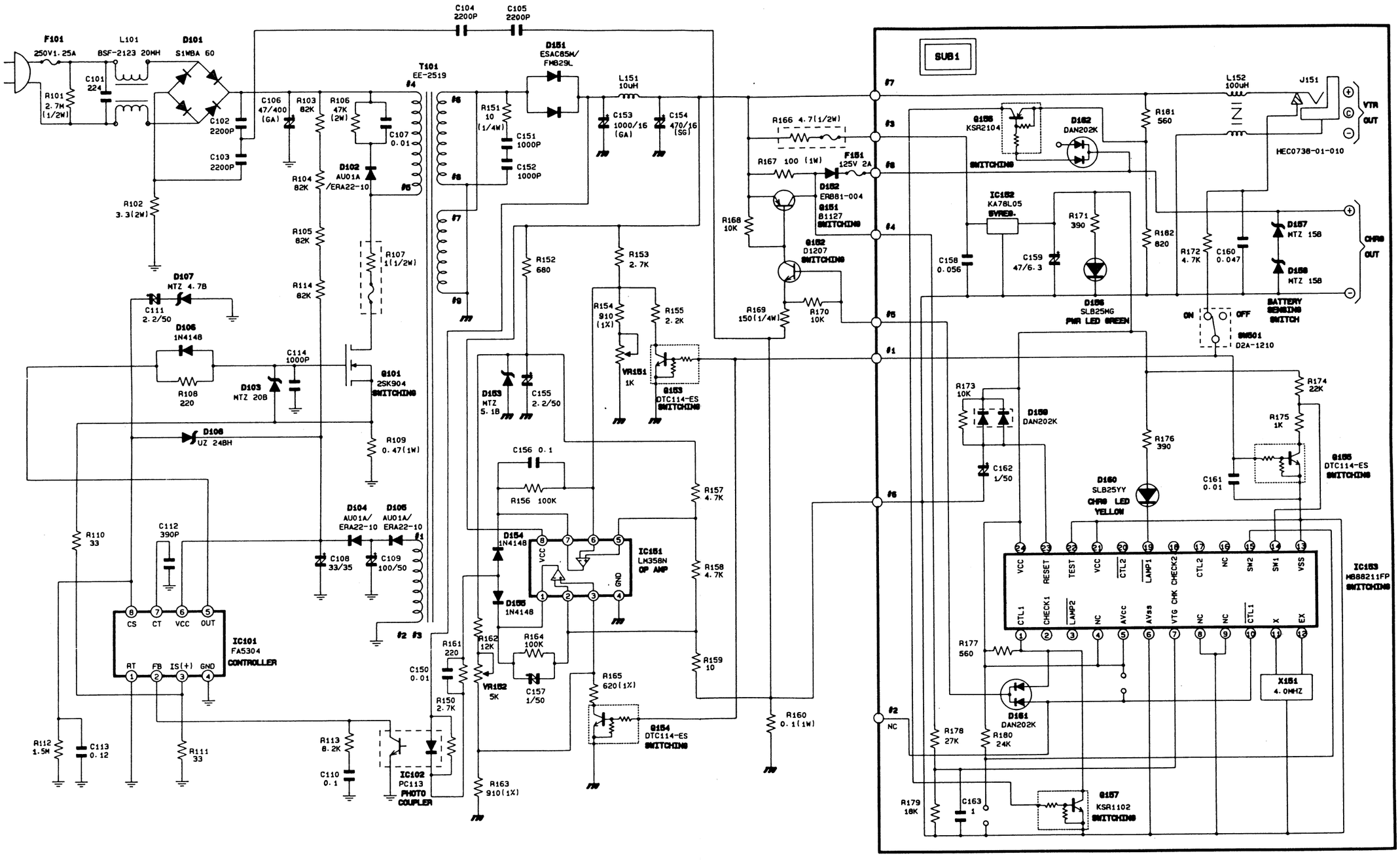


(BOTTOM SIDE)



ADAPTOR

13-1. ADAPTOR



NOTE : ' ○ ' IS CONNECTED WITH JUMPER IN THE BOARD

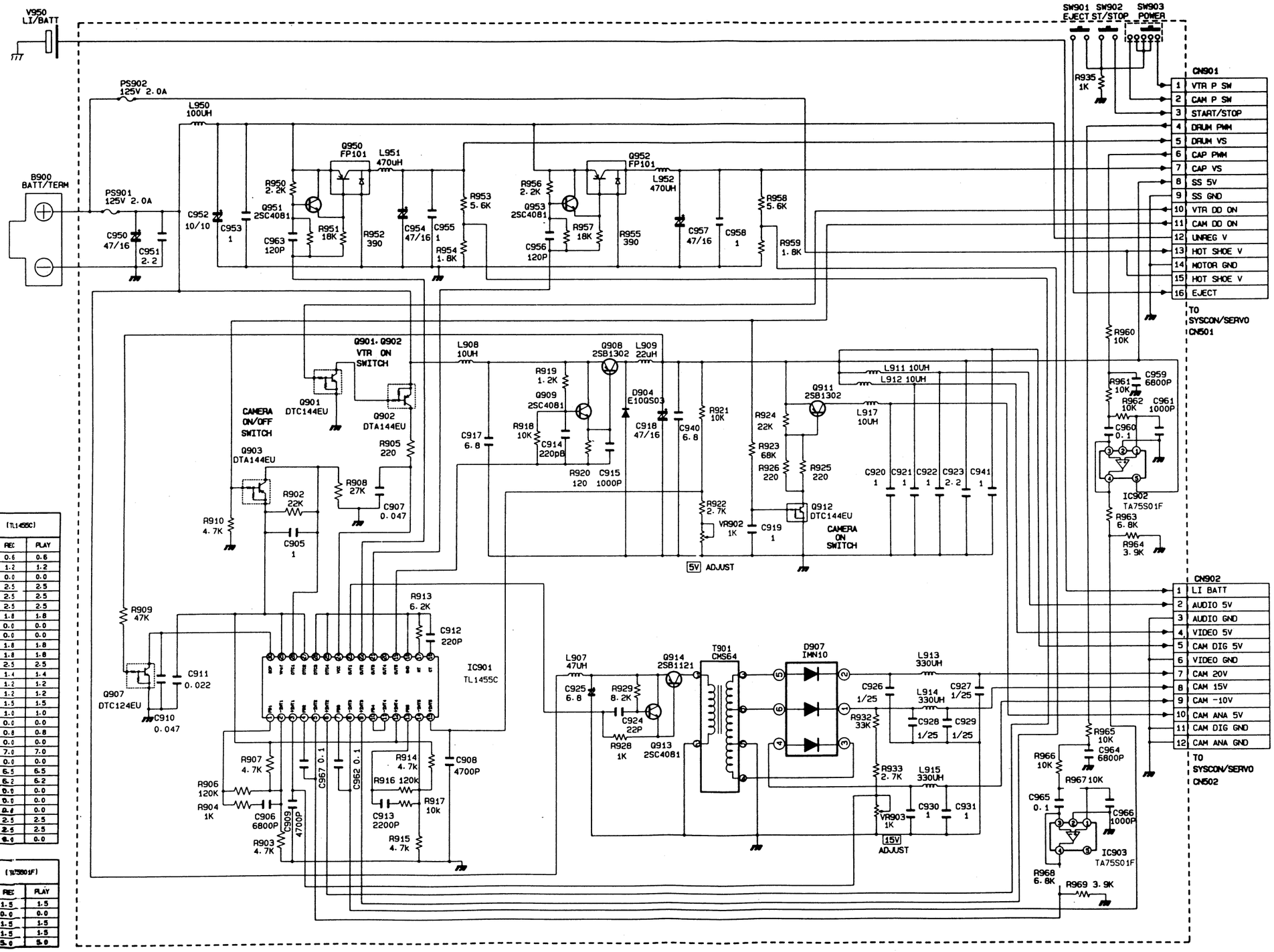
SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety when replacing any of these components. Use only the same type.

DC/DC CONV.

13-2. DC/DC CONVERTER



IC 901 (TL1455C)		
PIN NO.	REC	PLAY
1	0.6	0.6
2	1.2	1.2
3	0.0	0.0
4	2.5	2.5
5	2.5	2.5
6	2.5	2.5
7	1.8	1.8
8	0.0	0.0
9	0.0	0.0
10	1.8	1.8
11	1.8	1.8
12	2.5	2.5
13	1.4	1.4
14	1.2	1.2
15	1.2	1.2
16	1.5	1.5
17	1.0	1.0
18	0.0	0.0
19	0.8	0.8
20	0.0	0.0
21	7.0	7.0
22	0.0	0.0
23	6.5	6.5
24	6.2	6.2
25	0.0	0.0
26	0.0	0.0
27	0.0	0.0
28	2.5	2.5
29	2.5	2.5
30	0.0	0.0

IC 902 (TA75S01F)		
PIN NO.	REC	PLAY
1	1.5	1.5
2	0.0	0.0
3	1.5	1.5
4	1.5	1.5
5	5.0	5.0

IMPORTANT SAFETY NOTICE
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only specified manufacturer's parts.

NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. A part may be slightly different or omitted since this drawing was prepared.

SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

SYSTEM CONTROL
SERVO

13-3. SYSTEM CONTROL/SERVO

The schematic diagram of "SYSTEM CONTROL/SERVO" is on page 13-17.

IC 503 (CXP80P724)

PIN NO.	REC	PLAY
1	0.0	0.0
2	5.0	5.0
3	N.C	N.C
4	0.0	0.0
5	0.0	5.0
6	5.0	5.0
7	5.0	5.0
8	5.0	5.0
9	5.0	5.0
10	5.0	5.0
11	0.0	0.0
12	5.0	5.0
13	0.0	0.0
14	0.0	0.0
15	5.0	0.0
16	0.0	5.0
17	0.0	0.0
18	5.0	5.0
19	5.0	5.0
20	5.0	5.0
21	5.0	5.0
22	0.0	0.0
23	5.0	5.0
24	5.0	5.0
25	5.0	5.0
26	0.0	0.0
27	5.0	5.0
28	5.0	5.0
29	0.0	0.0
30	5.0	5.0
31	5.0	5.0
32	0.0	5.0
33	0.0	0.0
34	5.0	5.0
35	0.0	0.0
36	5.0	5.0
37	5.0	5.0
38	5.0	5.0
39	0.0	0.0
40	5.0	5.0
41	0.0	0.0
42	0.S	0.S
43	0.S	0.S
44	5.0	5.0
45	0.0	0.0

IC 503 (CXP80P724)

PIN NO.	REC	PLAY
46	5.0	5.0
47	5.0	5.0
48	5.0	5.0
49	5.0	5.0
50	4.5	4.5
51	0.0	0.0
52	0.0	0.0
53	5.0	5.0
54	5.0	5.0
55	N.C	N.C
56	0.0	0.0
57	0.0	0.0
58	5.0	5.0
59	0.0	0.0
60	4.3	4.3
61	3.2	3.4
62	1.2	4.5
63	5.0	5.0
64	5.0	5.0
65	0.0	0.0
66	3.0	3.0
67	0.0	0.0
68	5.0	5.0
69	5.0	5.0
70	5.0	5.0
71	N.C	N.C
72	N.C	N.C
73	0.0	0.0
74	0.0	0.0
75	5.0	5.0
76	5.0	5.0
77	5.0	5.0
78	5.0	5.0
79	5.0	5.0
80	5.0	5.0
81	5.0	5.0
82	5.0	5.0
83	5.0	5.0
84	5.0	5.0
85	5.0	5.0
86	0.S	0.S
87	0.S	0.S
88	0.0	0.0
89	5.0	5.0
90	5.0	5.0

IC 503 (CXP80P724)

PIN NO.	REC	PLAY
91	0.0	0.0
92	0.0	0.0
93	0.0	5.0
94	0.0	5.0
95	5.0	5.0
96	5.0	5.0
97	5.0	5.0
98	5.0	5.0
99	5.0	5.0
100	5.0	5.0

IC 501 (S-8420BF-T1)

PIN NO.	REC	PLAY
1	5.0	5.0
2	N.C	N.C
3	5.0	5.0
4	0.0	0.0
5	5.0	5.0
6	0.0	0.0
7	5.0	5.0
8	7.0	7.0

IC 502 (BA6285FS)

PIN NO.	REC	PLAY
1	0.0	0.0
2	N.C	N.C
3	0.0	0.0
4	7.0	7.0
5	7.0	7.0
6	0.0	0.0
7	N.C	N.C
8	N.C	N.C
9	N.C	N.C
10	N.C	N.C
11	0.0	0.0
12	0.0	0.0
13	N.C	N.C
14	0.0	0.0
15	0.0	0.0
16	0.0	0.0

IC 504 (KA8322)

PIN NO.	REC	PLAY
1	1.8	1.8
2	0.0	5.0
3	2.5	2.5
4	2.5	2.5
5	2.5	2.5
6	2.5	2.5
7	N.C	N.C
8	N.C	N.C
9	N.C	N.C
10	2.5	2.5
11	2.5	2.5
12	2.5	2.5
13	0.0	0.0
14	2.0	2.0
15	0.0	4.0
16	2.5	2.5
17	3.2	3.2
18	0.0	5.0
19	0.0	4.0
20	0.0	0.0
21	0.0	0.0
22	0.0	0.0
23	5.0	5.0
24	3.2	3.2
25	0.0	3.5
26	0.0	0.0
27	5.0	5.0
28	4.0	4.0
29	4.0	4.0
30	5.0	5.0
31	0.0	0.0
32	0.0	0.0
33	N.C	N.C
34	0.S	0.S
35	0.S	0.S
36	0.0	0.0
37	0.0	0.0
38	5.0	5.0
39	0.0	0.0
40	0.0	0.0
41	0.0	0.0
42	0.0	0.0
43	0.0	0.0
44	0.0	0.0
45	5.0	5.0

IC 504 (KA8322)

PIN NO.	REC	PLAY
46	2.5	2.5
47	0.0	0.0
48	5.0	2.5
49	3.0	3.0
50	2.5	2.5
51	2.5	2.5
52	2.5	2.5
53	5.0	5.0
54	2.5	2.5
55	2.5	2.5
56	2.5	2.5
57	2.5	2.5
58	0.0	2.5
59	0.0	2.2
60	2.5	2.5
61	5.0	5.0
62	3.2	3.2
63	2.5	2.5
64	3.2	3.2

IC 508 (BU5997)

PIN NO.	REC	PLAY
1	N.C	N.C
2	5.0	5.0
3	5.0	5.0
4	5.0	5.0
5	5.0	5.0
6	5.0	5.0
7	N.C	N.C
8	5.0	5.0
9	5.0	5.0
10	N.C	N.C
11	N.C	N.C
12	5.0	5.0
13	5.0	5.0
14	0.0	0.0
15	N.C	N.C
16	5.0	5.0
17	0.0	0.0
18	5.0	5.0
19	5.0	5.0
20	5.0	5.0

IC 505 (TPIC13270F)

PIN NO.	REC	PLAY
1	N.C	N.C
2	N.C	N.C
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	N.C	N.C
7	5.0	5.0
8	6.0	6.0
9	6.0	6.0
10	0.0	0.0
11	N.C	N.C
12	0.0	0.0
13	1.5	1.5
14	0.0	0.0
15	0.0	0.0
16	0.0	0.0
17	0.0	0.0
18	0.0	0.0
19	1.5	1.5
20	0.0	0.0
21	0.0	0.0
22	0.0	0.0
23	0.0	0.0
24	N.C	N.C
25	N.C	N.C
26	N.C	N.C
27	N.C	N.C
28	N.C	N.C
29	N.C	N.C
30	N.C	N.C

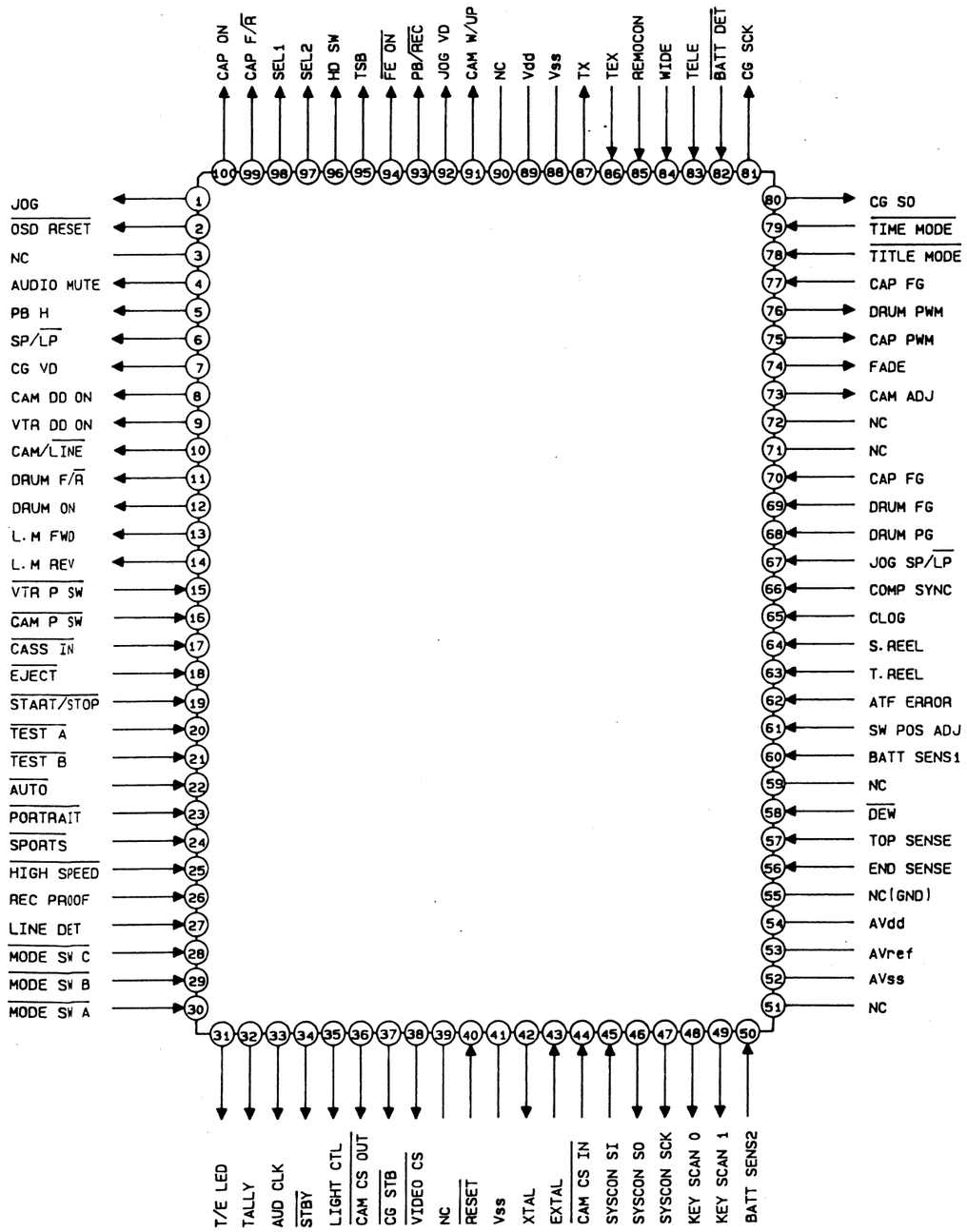
IC 506 (LB1851M)

PIN NO.	REC	PLAY
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	2.0	2.0
5	7.0	7.0
6	5.0	5.0
7	5.0	5.0
8	0.0	0.0
9	N.C	N.C
10	2.5	2.5
11	2.5	2.5
12	2.5	2.5
13	2.5	5.0
14	0.0	0.0
15	0.0	0.0
16	0.0	0.0
17	0.0	0.0
18	5.0	5.0
19	N.C	N.C
20	1.3	1.3
21	1.3	1.3
22	2.5	2.5
23	2.5	2.5
24	3.5	3.5
25	3.5	3.5
26	0.0	0.0
27	0.0	0.0
28	0.0	0.0
29	0.0	0.0
30	0.0	0.0

IC 507 (TC7SU04F)

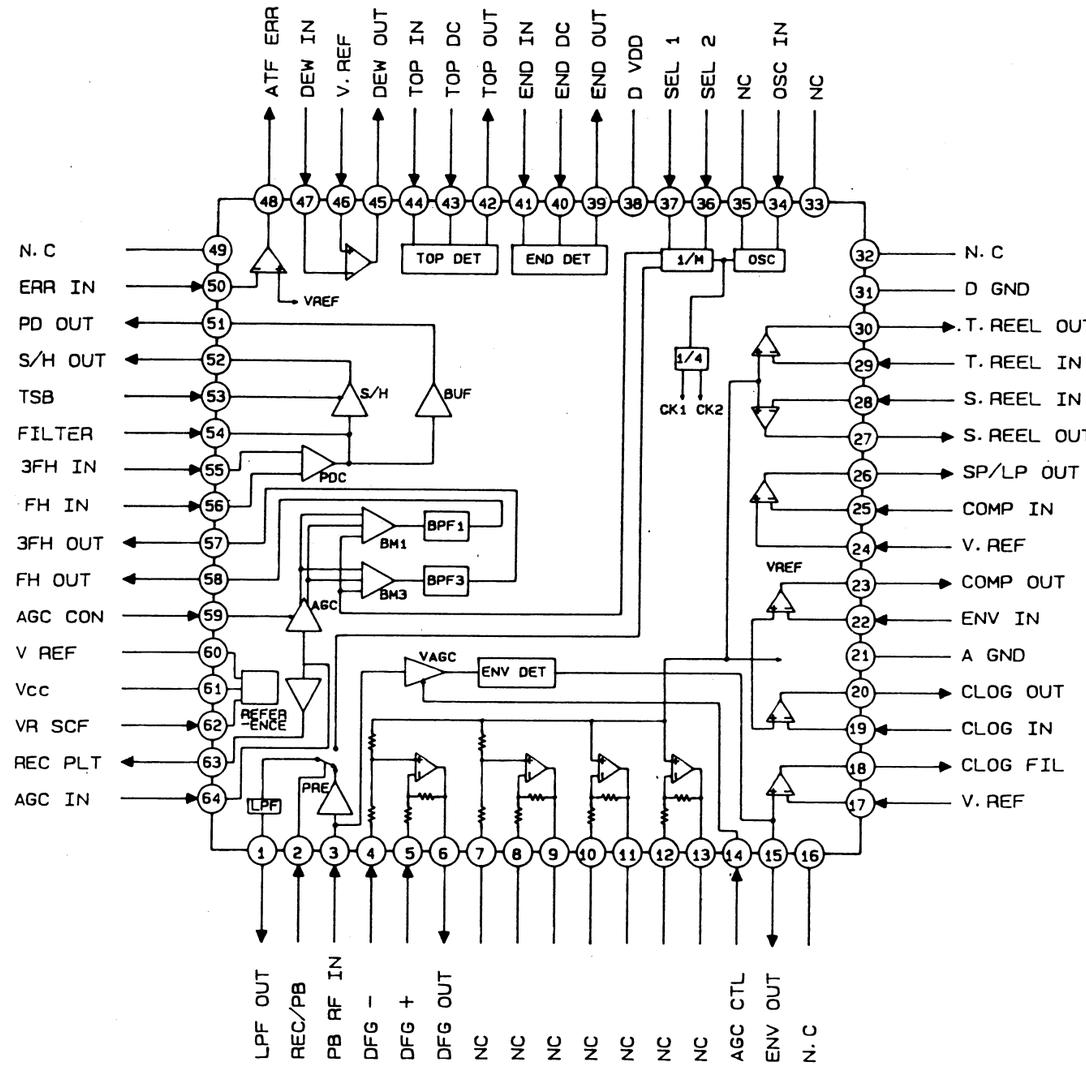
PIN NO.	REC	PLAY
1	N.C	N.C
2	0.S	0.S
3	0.0	0.0
4	0.S	0.S
5	5.0	5.0

IC503 CXP80724



SYSTEM CONTROL
SERVO

IC504 KA8322



VIDEO

13-4. VIDEO

The schematic diagram of "VIDEO" is on page 13-18.

IC 101 (NJM2249M)		
PIN NO.	REC	PLAY
1	1.8	1.8
2	0.0	0.0
3	2.3	2.3
4	0.0	0.0
5	2.8	2.8
6	5.0	5.0
7	1.2	1.2
8	0.0	0.0

IC 103 (CXL1506)		
PIN NO.	REC	PLAY
1	1.8	1.8
2	2.2	2.2
3	0.0	0.0
4	1.4	1.4
5	0.0	0.0
6	1.6	1.6
7	0.0	0.0
8	0.0	0.0
9	4.7	4.7
10	4.7	4.7
11	0.0	0.0
12	1.8	1.8
13	1.8	1.8
14	4.7	4.7
15	0.6	0.6
16	0.0	0.0

IC 104 (CXA1700)		
PIN NO.	REC	PLAY
1	0.6	0.7
2	2.2	2.1
3	2.1	2.1
4	2.0	2.0
5	2.0	2.0
6	2.0	2.0
7	0.0	2.0
8	2.0	0.0
9	2.0	2.0
10	2.0	2.0
11	2.0	2.0
12	2.0	2.0
13	2.5	2.5
14	1.3	1.6
15	3.0	3.0
16	2.9	2.9
17	0.0	0.0
18	3.1	3.1
19	1.9	2.0
20	3.0	3.0
21	1.9	2.0
22	2.9	2.9
23	2.3	2.5
24	3.0	3.0
25	4.9	5.0
26	0.0	0.0
27	2.7	2.7
28	2.2	2.2
29	2.2	1.8
30	2.2	2.3
31	1.7	1.7
32	1.7	1.7
33	2.4	2.4
34	1.8	1.8
35	0.0	0.0
36	1.8	1.8
37	1.5	1.6
38	5.0	5.0
39	2.3	0.0
40	0.0	0.0
41	0.0	0.0
42	2.9	3.0
43	2.9	3.0
44	4.0	4.0
45	0.0	3.2

IC 104 (CXA1700)		
PIN NO.	REC	PLAY
46	2.0	2.0
47	5.0	5.0
48	5.0	5.0
49	5.0	5.0
50	0.0	0.0
51	2.3	2.4
52	2.4	0.0
53	2.7	2.7
54	2.5	2.5
55	1.9	1.9
56	0.0	0.0
57	2.1	2.1
58	4.2	4.2
59	3.2	3.4
60	3.3	3.3
61	2.3	2.3
62	1.8	2.0
63	2.0	2.0
64	2.0	2.0

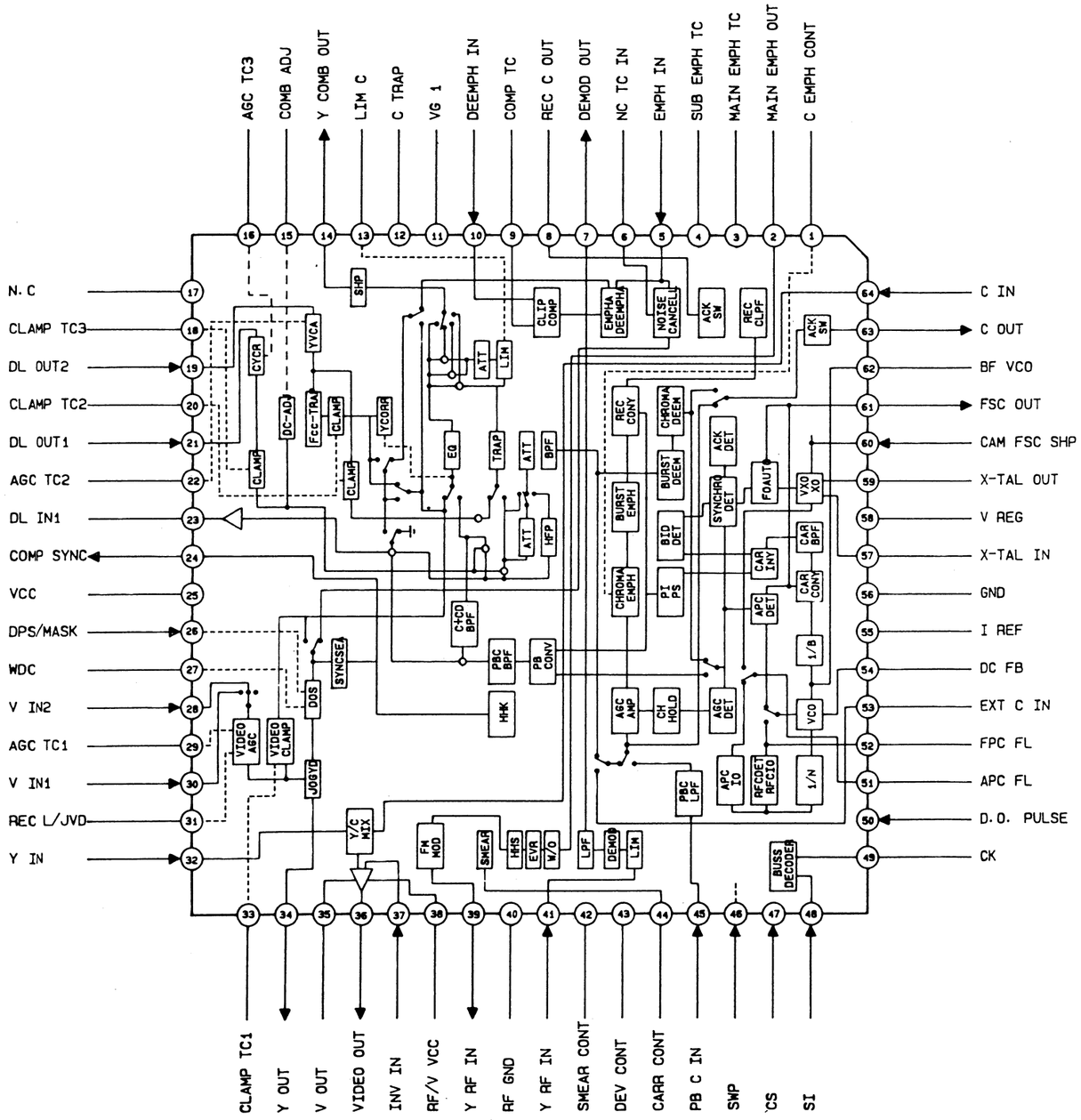
IC 105 (M52358VP)		
PIN NO.	REC	PLAY
1	0.0	4.7
2	0.0	2.0
3	0.0	0.0
4	0.0	2.1
5	0.0	2.3
6	0.0	0.0
7	0.0	2.2
8	0.0	0.0
9	0.0	2.0
10	0.0	2.0
11	0.0	1.5
12	0.0	0.0
13	0.0	4.1
14	0.0	2.2
15	0.0	2.1
16	0.0	1.8
17	0.0	4.5
18	0.0	0.0
19	0.0	4.7
20	0.0	0.0
21	0.0	1.5
22	0.0	2.5
23	0.0	4.7
24	0.0	0.0

IC 106 (CXA1202R)		
PIN NO.	REC	PLAY
1	4.7	4.7
2	3.4	0.0
3	4.4	4.4
4	3.4	0.0
5	2.7	2.7
6	3.4	0.0
7	4.7	4.7
8	2.3	1.9
9	4.7	4.5
10	4.0	2.6
11	3.1	0.0
12	0.0	2.7
13	2.8	0.0
14	2.0	2.8
15	1.4	2.8
16	4.7	2.6
17	4.7	4.7
18	0.0	2.7
19	2.3	0.0
20	0.0	2.0
21	0.0	0.0
22	3.3	0.0
23	2.7	3.4
24	2.0	2.8
25	0.0	2.1
26	4.7	2.8
27	4.7	4.7
28	2.7	4.7
29	4.4	2.4
30	4.4	2.5
31	2.7	2.5
32	4.7	2.5
33	4.7	4.7
34	4.7	4.7
35	0.0	2.8
36	2.0	2.2
37	2.7	2.8
38	3.5	3.5
39	2.6	2.6
40	0.0	0.0
41	0.0	0.0
42	3.6	3.7
43	0.0	0.0
44	4.7	4.7
45	0.0	4.0

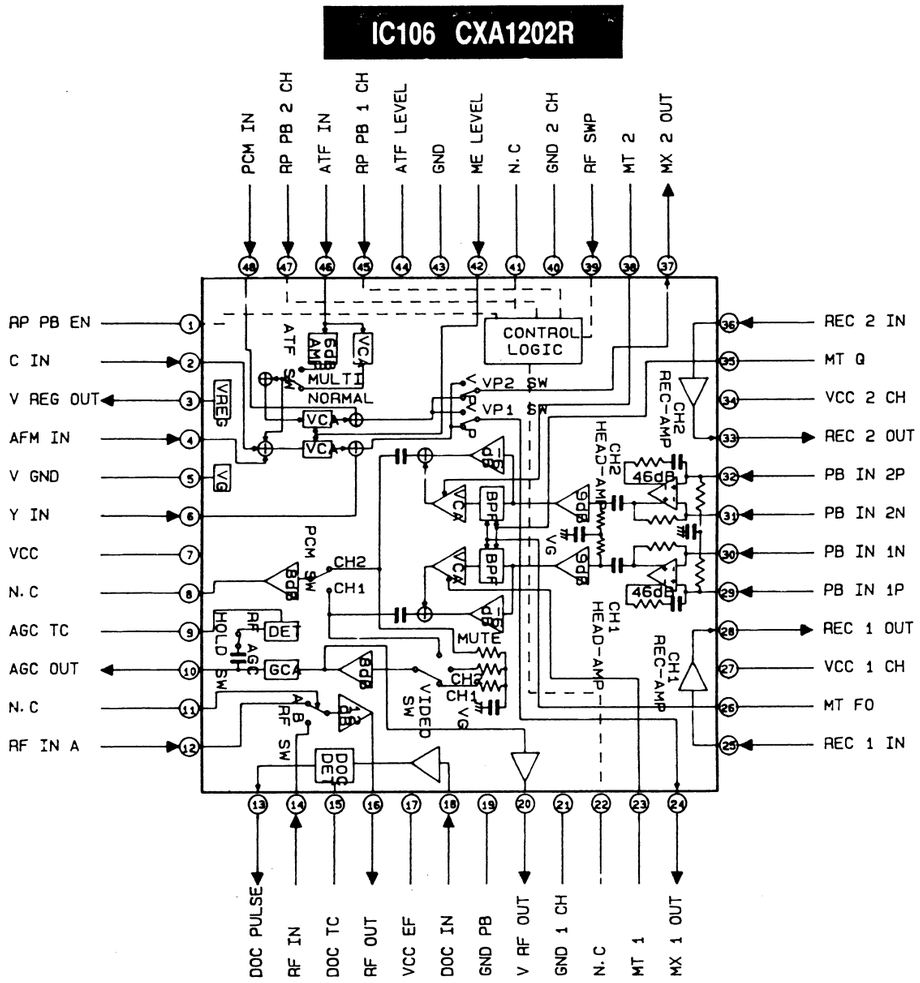
IC 106 (CXA1202R)		
PIN NO.	REC	PLAY
46	2.0	2.7
47	0.0	3.9
48	3.1	2.7

VIDEO

IC104 CXA1700



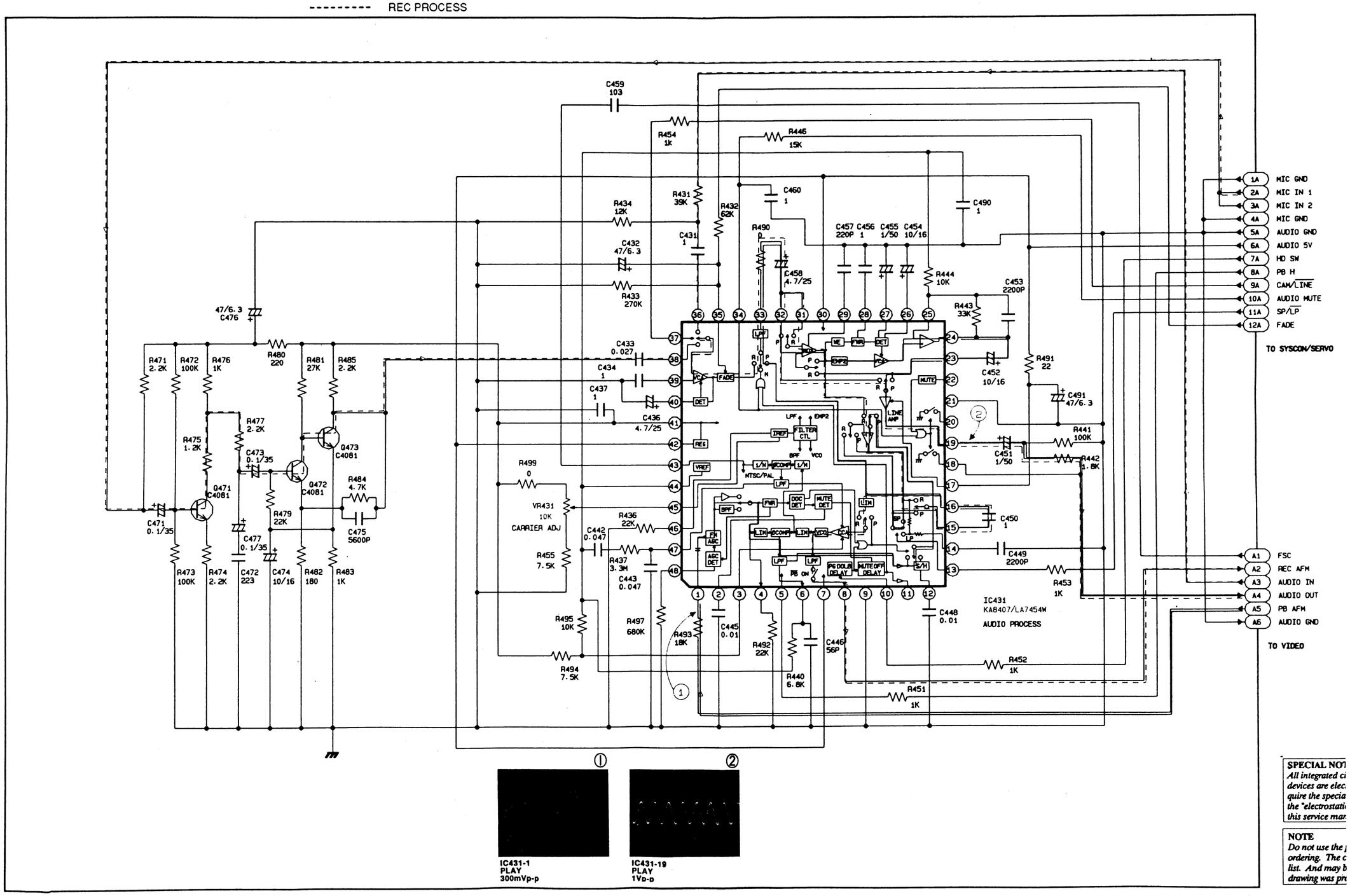
IC106 CXA1202R



AUDIO

13-5. AUDIO

PB PROCESS
REC PROCESS

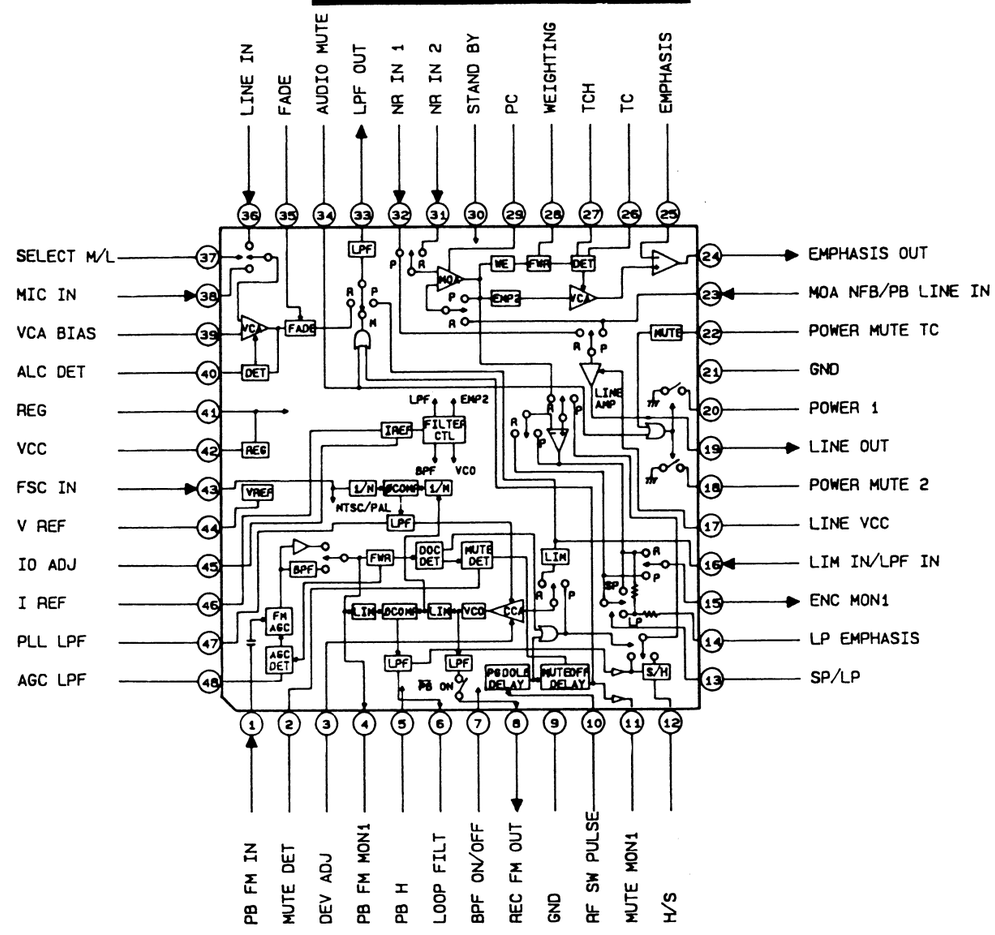


SPECIAL NOT
All integrated ci devices are elec. quire the specia the "electrostati this service mar.

NOTE
Do not use the ordering. The c list. And may b drawing was pr

IC 431 (LA7454M)		
PIN NO.	REC	PLAY
1	1.0	2.5
2	0.0	0.8
3	3.3	3.3
4	2.5	1.5
5	0.0	4.5
6	2.1	5.0
7	5.0	5.0
8	1.9	1.3
9	0.0	0.0
10	2.4	2.4
11	0.0	0.0
12	0.0	2.2
13	4.7	4.7
14	2.1	2.1
15	2.1	2.1
16	2.1	2.1
17	4.9	4.9
18	0.0	0.0
19	2.4	2.4
20	0.0	0.0
21	0.0	0.0
22	5.0	5.0
23	2.1	2.1
24	2.1	2.1
25	2.1	2.1
26	2.1	2.1
27	2.7	2.7
28	2.0	2.0
29	2.8	2.8
30	5.0	5.0
31	2.1	2.1
32	2.1	2.1
33	2.1	2.1
34	0.7	0.7
35	0.0	0.0
36	2.1	2.1
37	4.0	0.0
38	2.1	2.1
39	2.1	2.1
40	1.7	2.6
41	4.2	4.2
42	4.9	4.9
43	3.9	3.9
44	2.1	2.1
45	4.2	4.2
46	2.5	2.5
47	0.0	0.0
48	0.0	0.0

IC431 KA8407 / LA7454AW

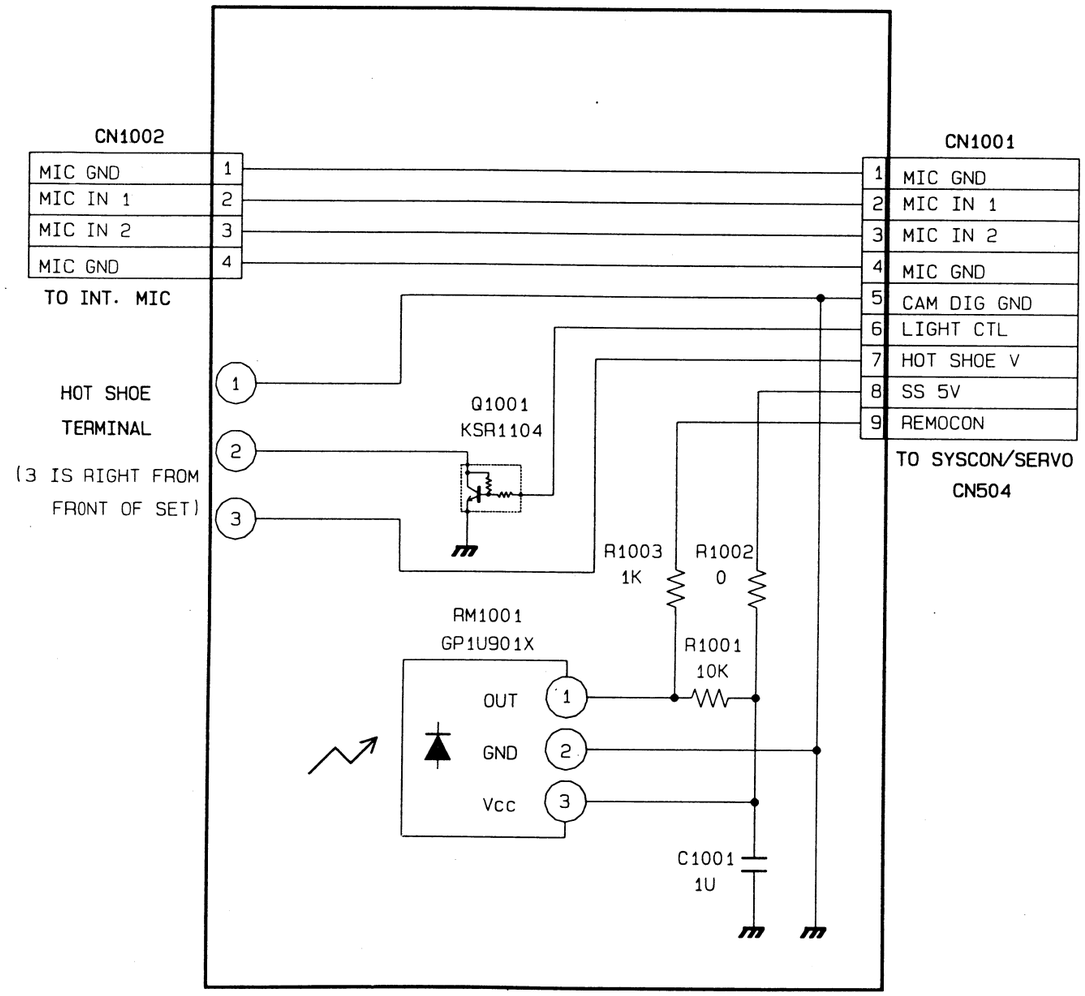


TE
rcuits and many other semiconductor
trostatically sensitive and therefore re-
l handling techniques described under
cally sensitive (ES) devices" section of
ual.

part number shown on this drawing for
orrect part number is shown in the parts
e slightly different or amended since this
pared.

HOT SHOE

13-6. HOT SHOE

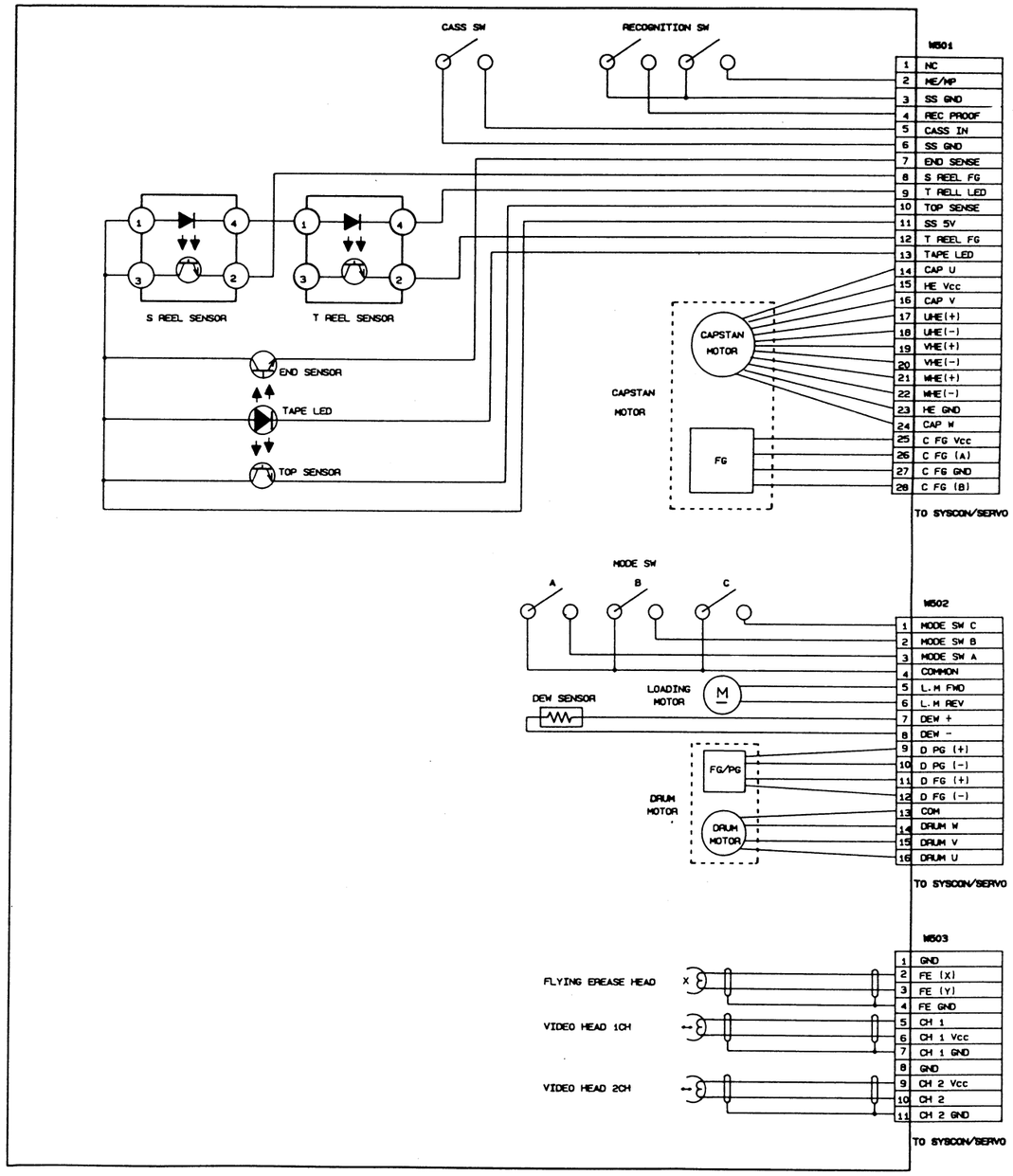


SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

DECK FPC

13-7. DECK FPC



C C D

13-8. CCD

The schematic diagram of "CCD" is on page 13-19.

PIN NO	VOLTAGE(DC)
ICD01	ICX055AK
1	-6.4
2	-6.4
3	-0.2
4	-0.2
5	0.0
6	4.2
7	3.3
8	7.0
9	15.0
10	0.0
11	8.8
12	-6.8
13	5.3
14	0.0
15	2.5
16	2.0
ICD02	KS7220
1	0.0
2	4.1
3	0.2
4	0.2
5	4.5
6	4.3
7	4.5
8	4.3
9	4.9
10	0.0
11	0.0
12	15.0
13	-6.4
14	-6.4
15	0.0
16	-0.2
17	-0.2
18	-6.8
19	-6.8
20	15.0
ICD03	KA7302
1	3.7
2	3.7
3	2.9
4	2.8
5	0.0

PIN NO	VOLTAGE(DC)
6	1.8
7	3.8
8	0.0
9	2.2
10	2.5
11	3.8
12	5.0
13	2.2
14	2.2
15	0.0
16	4.9
17	0.0
18	4.9
19	2.2
20	2.1
21	2.0
22	2.0
23	2.2
24	2.2
25	2.1
26	0.0
27	1.6
28	0.2
29	3.8
30	0.2
ICD04	KAD0228
1	0.0
2	0.0
3	2.2
4	2.3
5	2.3
6	1.9
7	2.1
8	1.6
9	2.6
10	0.7
11	5.0
12	1.1
13	5.0
14	5.0
15	5.0
16	2.6
17	2.6
18	5.0

PIN NO	VOLTAGE(DC)
19	1.2
20	0.0
21	0.0
22	0.6
23	0.6
24	0.0
ICD05	TB6504
1	0.0
2	4.9
3	4.8
4	0.0
5	4.7
6	0.8
7	4.9
8	4.8
9	0.2
10	0.0
11	0.2
12	2.3
13	2.3
14	0.2
15	0.0
16	0.2
17	4.8
18	0.0
19	0.0
20	4.9
21	0.0
22	2.0
23	4.9
24	4.8
ICD06	NJM3414
1	0.3
2	3.0
3	3.0
4	0.0
5	2.4
6	2.4
7	2.1
8	5.0
ICD07	NJM2902
1	0.0
2	2.1
3	2.1

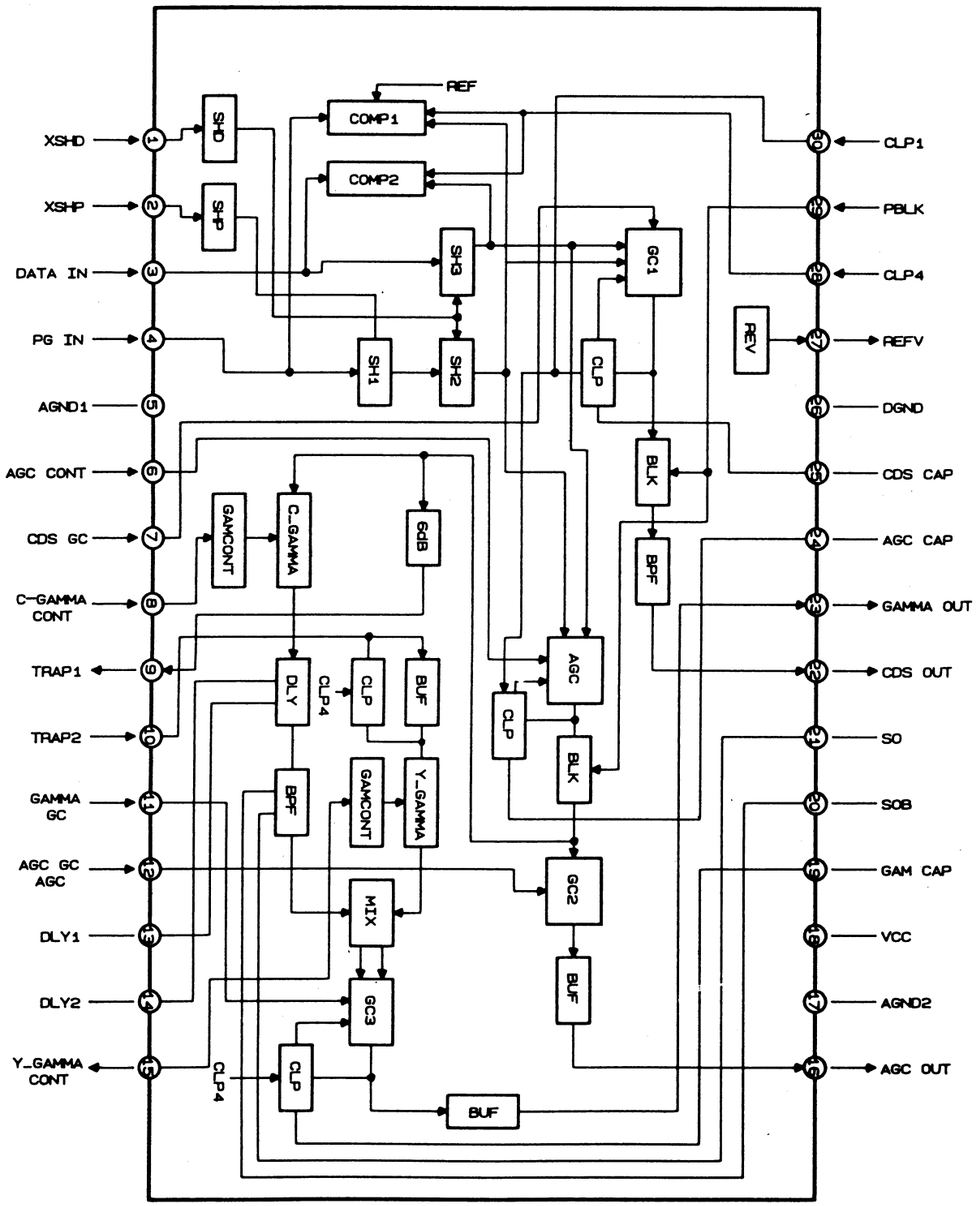
PIN NO	VOLTAGE(DC)
4	4.8
5	5.0
6	2.3
7	2.3
8	2.0
9	2.1
10	2.1
11	0.0
12	2.1
13	2.1
14	2.1

PIN NO	VOLTAGE(DC)
QD01	2SK300
B	7.3
E	14.8
C	8.2
QD02	DTC143TU
B	3.2
E	0.2
C	0.1
QD03	IMZ1
1	4.9
2	4.4
3	4.9
4	0.0
5	4.9
6	5.4
QD04	DTC144EU
B	0.0
E	0.0
C	2.3
QD05	DTC144WK
B	0.0
E	0.0
C	4.9
QD06	DTC144WK
B	4.8
E	0.0
C	0.0
QD07	IMX1
1	0.0
2	0.1
3	1.8
4	1.2
5	2.4
6	1.8
QD08	IMZ1
1	5.0
2	0.6
3	1.2
4	0.0
5	1.8
6	1.2
QD09	IMT1
1	0.0
2	5.0

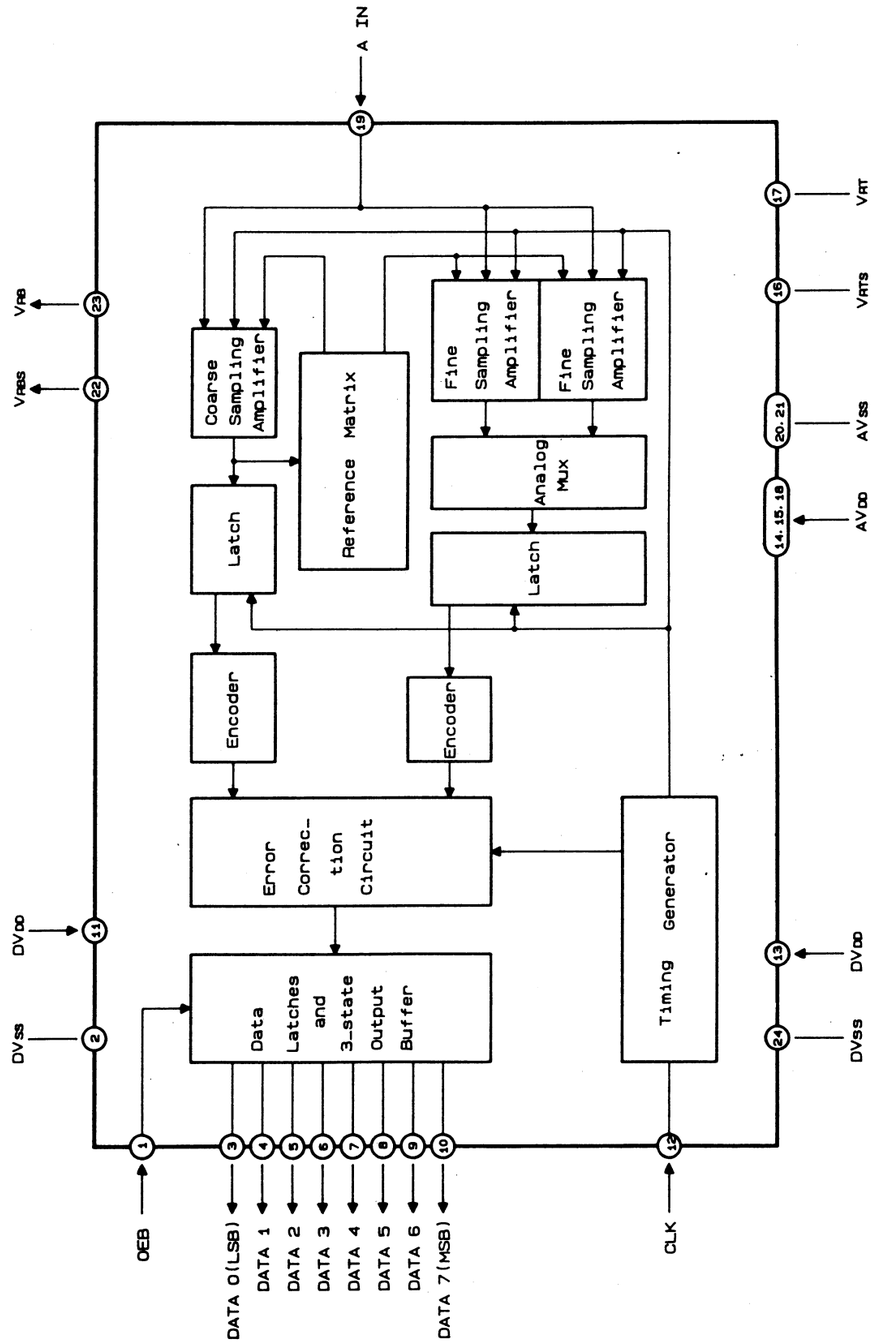
PIN NO	VOLTAGE(DC)
3	0.0
4	0.0
5	5.0
6	5.7
QD10	2SC2812
B	2.2
E	1.5
C	5.0
QD11	2SA1179
B	1.8
E	2.5
C	0.0
QD12	IMZ1
1	5.0
2	1.9
3	2.4
4	0.0
5	2.4
6	1.9
QD13	IMZ1
1	5.0
2	2.4
3	3.0
4	0.0
5	3.0
6	2.4
QD14	2SC2812
B	10.1
E	9.6
C	20.3
QD15	IMX1
1	15.0
2	1.3
3	0.8
4	10.1
5	1.3
6	0.8

C C D

ICD03 KA7302



ICD04 KAD0228



PROCESS

13-9. PROCESS

The schematic diagram of "PROCESS" is on page 13-20.

PIN NO	VOLTAGE(DC)
ICP02	KDA0408
1	0.0
2	0.0
3	3.8
4	0.0
5	4.4
6	0.0
7	4.0
8	0.0
9	3.8
10	4.9
11	4.9
12	0.0
13	0.0
14	0.0
15	0.0
16	0.0
17	0.0
18	0.0
19	0.0
20	0.0
21	0.0
22	0.1
23	0.7
24	0.0
25	0.7
26	2.2
27	1.7
28	1.9
29	1.8
30	1.7
31	2.9
32	1.8
33	1.8
34	1.8
35	1.9
36	1.9
37	0.0
38	2.1
39	1.6
40	2.6
41	2.6
42	4.9
43	0.0

PIN NO	VOLTAGE(DC)
44	4.9
45	2.7
46	4.9
47	3.8
48	0.0
ICP03	TB6504
1	0.0
2	4.9
3	4.9
4	4.9
5	4.8
6	2.2
7	4.9
8	4.6
9	0.4
10	0.0
11	0.4
12	2.6
13	0.4
14	0.4
15	0.0
16	2.5
17	4.6
18	3.0
19	0.0
20	4.9
21	0.0
22	2.0
23	4.9
24	4.9
ICP04	MB88346
1	0.0
2	2.7
3	1.3
4	2.7
5	1.9
6	0.0
7	4.3
8	3.1
9	0.0
10	4.9
11	4.9
12	0.0
13	0.0

PIN NO	VOLTAGE(DC)
14	0.1
15	0.0
16	0.0
17	4.9
18	4.9
19	4.8
20	0.0
ICP05	X24C01
1	0.0
2	0.0
3	0.0
4	0.0
5	0.0
6	0.0
7	0.0
8	4.9
ICP06	UPD78214GC
1	3.5
2	0.0
3	0.0
4	0.0
5	3.6
6	3.5
7	1.6
8	1.6
9	0.0
10	0.0
11	3.6
12	3.6
13	3.6
14	3.6
15	3.6
16	3.6
17	0.0
18	0.0
19	0.0
20	0.0
21	0.0
22	0.0
23	0.0
24	0.0
25	0.0
26	0.0
27	0.0

PIN NO	VOLTAGE(DC)
28	0.0
29	0.0
30	0.0
31	4.3
32	4.1
33	4.2
34	0.0
35	3.0
36	4.6
37	0.0
38	4.2
39	2.8
40	3.6
41	3.6
42	0.0
43	2.9
44	0.1
45	3.0
46	1.6
47	1.1
48	0.1
49	0.2
50	0.0
51	0.0
52	0.0
53	0.0
54	0.0
55	0.0
56	0.0
57	0.0
58	0.0
59	0.0
60	3.6
61	0.0
62	0.0
63	0.0
64	3.6

PIN NO	VOLTAGE(DC)
ICP07	74HC132
1	3.9
2	3.9
3	0.7
4	0.7
5	0.7
6	3.9
7	0.0
8	1.5
9	3.0
10	3.0
11	3.0
12	1.3
13	1.3
14	4.6
ICP08	7W04FU
1	1.2
2	4.0
3	0.7
4	0.0
5	3.9
6	0.7
7	4.5
8	4.5

PIN NO	VOLTAGE(DC)
ICP01	KS7301
1	2.0
2	1.8
3	0.0
4	0.0
5	0.0
6	0.0
7	4.7
8	0.0
9	0.0
10	0.0
11	0.0
12	0.0
13	0.0
14	1.3
15	0.2
16	0.2
17	0.2
18	0.2
19	3.9
20	3.9
21	0.0
22	3.9
23	2.7
24	2.8
25	0.8
26	4.7
27	4.4
28	4.4
29	0.2
30	0.2
31	4.4
32	4.4
33	4.7
34	0.0
35	2.7
36	2.2
37	4.7
38	4.7
39	4.7
40	4.7
41	4.7
42	2.2
43	2.2

PIN NO	VOLTAGE(DC)
44	0.0
45	0.0
46	0.0
47	0.0
48	3.6
49	4.6
50	4.6
51	0.0
52	0.0
53	4.7
54	3.6
55	0.0
56	0.0
57	0.0
58	3.6
59	0.0
60	0.0
61	0.0
62	0.0
63	0.0
64	0.0
65	0.0
66	0.0
67	0.0
68	0.0
69	0.0
70	0.0
71	0.0
72	0.0
73	0.0
74	0.0
75	4.7
76	4.7
77	4.7
78	4.7
79	0.0
80	0.0
81	4.7
82	0.0
83	0.0
84	0.0
85	0.0
86	0.0

PIN NO	VOLTAGE(DC)
87	0.0
88	0.0
89	0.0
90	0.0
91	0.0
92	0.0
93	0.0
94	0.0
95	0.0
96	0.0
97	0.0
98	0.0
99	0.0
100	0.0
101	0.0
102	0.0
103	0.0
104	0.0
105	0.0
106	0.0
107	0.0
108	0.0
109	4.3
110	2.7
111	4.5
112	4.3
113	4.7
114	2.5
115	1.9
116	1.9
117	1.9
118	1.9
119	1.9
120	0.0
121	1.0
122	1.6
123	1.5
124	1.5
125	2.2
126	1.8
127	1.8
128	1.8
129	1.8
130	1.8

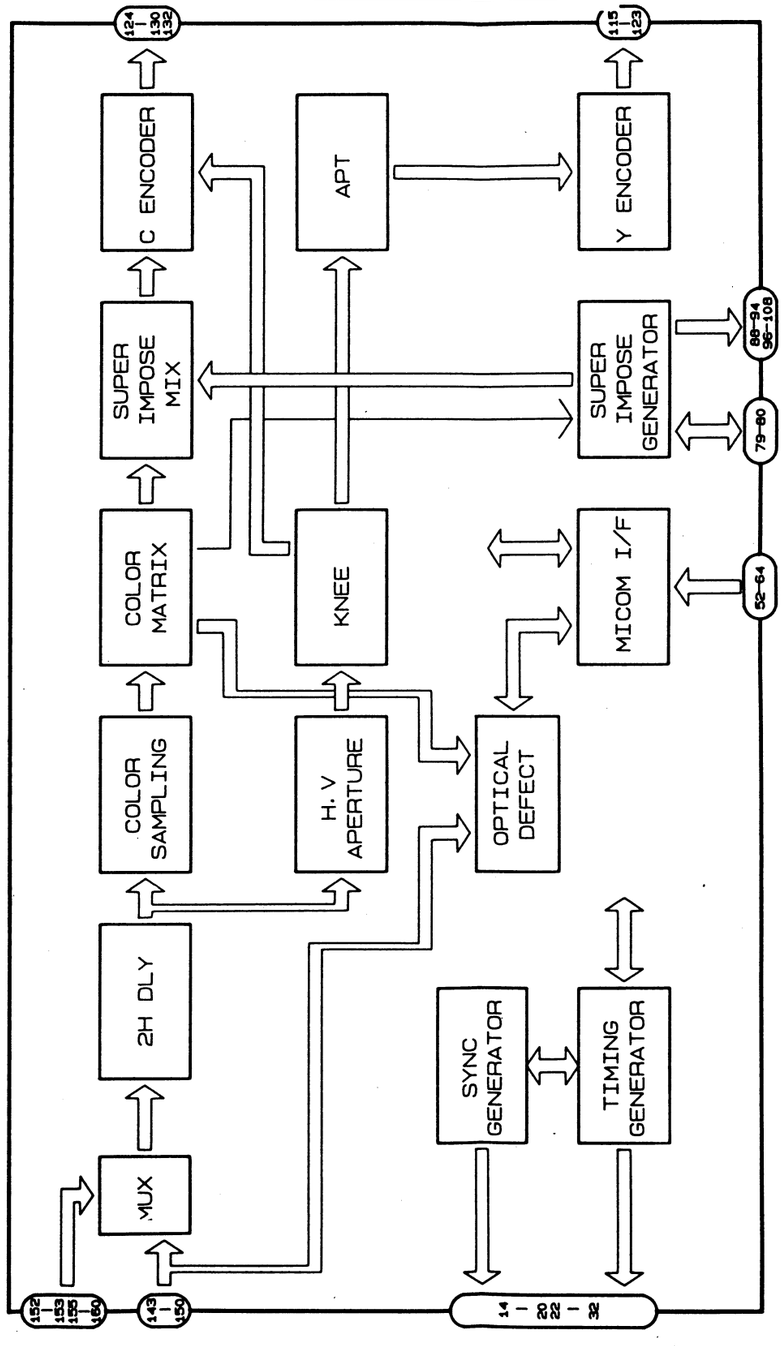
PIN NO	VOLTAGE(DC)
131	4.7
132	1.8
133	2.8
134	0.0
135	0.0
136	4.2
137	4.5
138	4.7
139	4.7
140	2.3
141	4.7
142	4.7
143	1.9
144	1.9
145	2.2
146	2.2
147	1.8
148	1.3
149	1.1
150	1.3
151	4.7
152	4.7
153	0.0
154	0.0
155	4.7
156	0.0
157	4.7
158	0.0
159	4.7
160	0.0

PROCESS

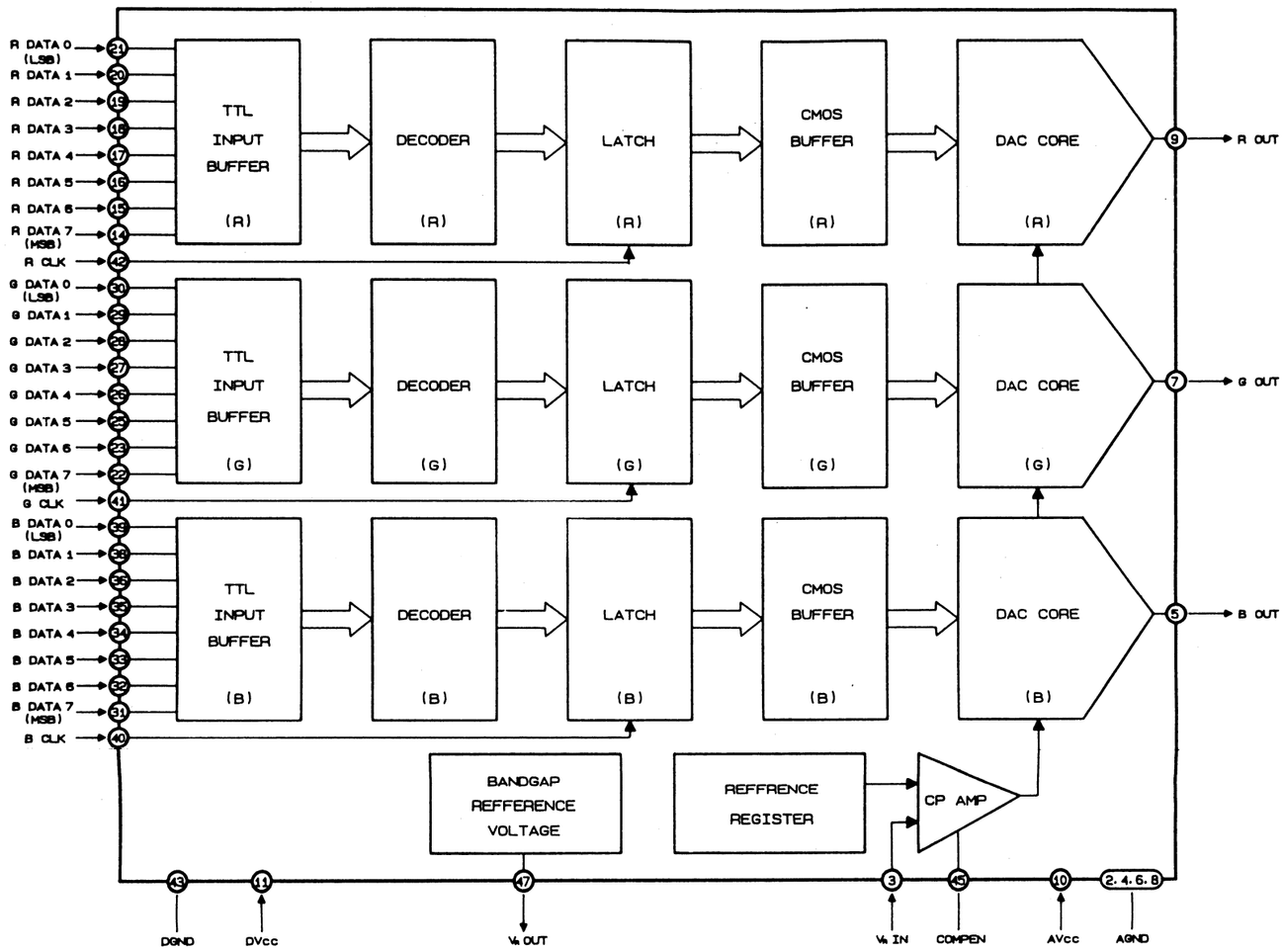
PIN NO	VOLTAGE(DC)
QP01	2SA1179
B	4.6
E	4.6
C	1.0
QP02	2SC2812
B	0.5
E	0.0
C	1.4
QP03	2SA1179
B	4.3
E	5.0
C	5.0
QP04	DTC144EU
B	5.0
E	0.0
C	0.0
QP05	DTC144EU
B	3.6
E	4.9
C	4.9
QP06	DTC144EU
B	3.6
E	0.0
C	0.0
QP07	2SC2812
B	4.4
E	3.8
C	4.9
QP08	2SC2812
B	3.2
E	2.6
C	4.8
QP09	2SC2812
B	2.5
E	2.9
C	3.8
QP10	2SC2812
B	3.8
E	4.1
C	4.8
QP11	2SC2812
B	2.3
E	1.6
C	4.9

PIN NO	VOLTAGE(DC)
QP12	2SC2812
B	4.0
E	3.5
C	4.9
QP13	2SC2812
B	4.1
E	3.4
C	4.9
QP14	2SC2812
B	4.8
E	4.2
C	4.8
QP15	2SC2812
B	2.9
E	2.3
C	3.2
QP16	2SC2812
B	3.4
E	2.8
C	4.9

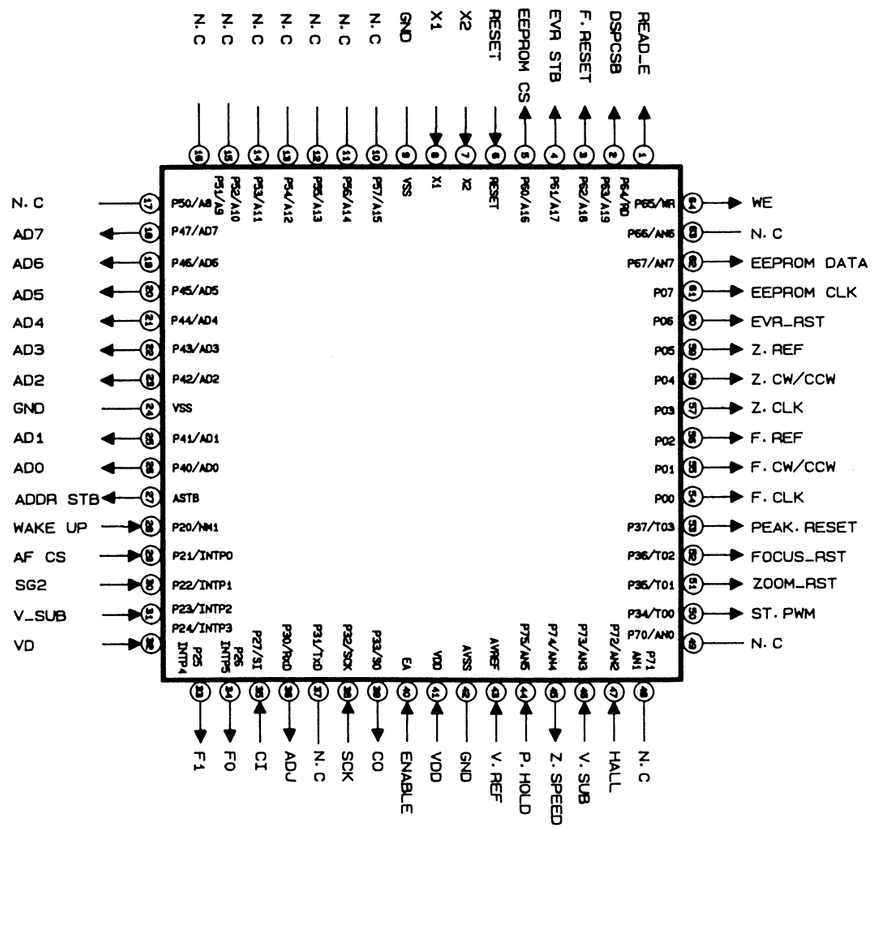
ICP01 KS7301



ICP02 KDA0408

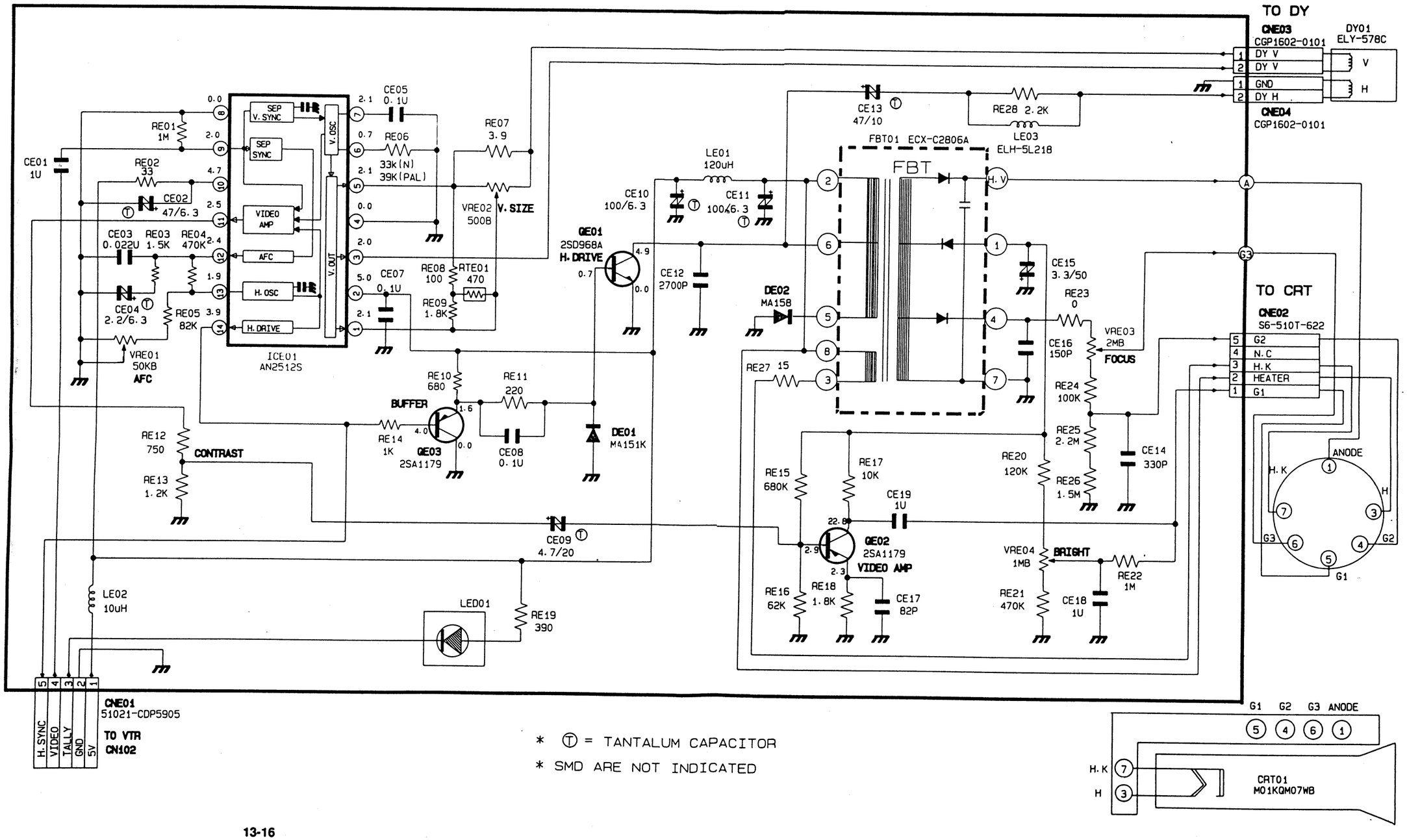


ICP06 UPD78214



E.V.F

13-10. EVF



* Ⓣ = TANTALUM CAPACITOR

* SMD ARE NOT INDICATED

E.V.F

PIN NO	VOLTAGE(DC)
ICE01	KA7007
1	2.1
2	5.0
3	2.0
4	0.0
5	2.1
6	0.7
7	2.1
8	5.0
9	0.1
10	0.0
11	2.0
12	4.7
13	2.5
14	2.4
15	1.9
16	3.9
QE01	2SD968A
B	0.7
E	0.0
C	4.9
QE02	2SA1179
B	2.9
E	2.3
C	22.8
QE03	2SA1179
B	4.0
E	1.6
C	0.0

SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

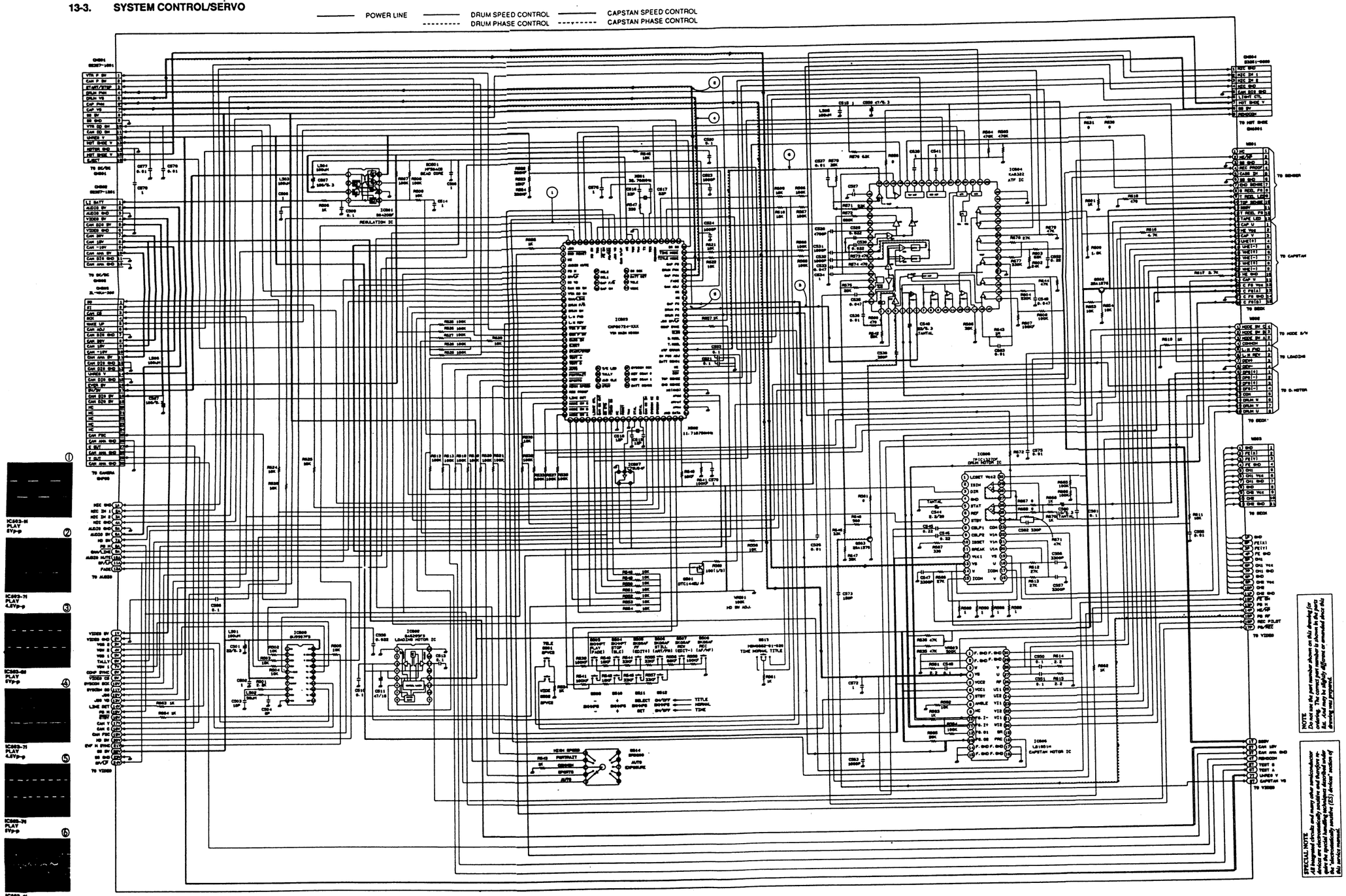
SYSTEM CONTROL SERVO

SYSTEM CONTROL SERVO

SYSTEM CONTROL SERVO

13-3. SYSTEM CONTROL/SERVO

POWER LINE
DRUM SPEED CONTROL
DRUM PHASE CONTROL
CAPSTAN SPEED CONTROL
CAPSTAN PHASE CONTROL



① IC803-M PLAY 5Vp-p
② IC803-71 PLAY 4.5Vp-p
③ IC803-60 PLAY 5Vp-p
④ IC803-71 PLAY 4.5Vp-p
⑤ IC803-76 PLAY 5Vp-p
⑥ IC803-61 PLAY

NOTE
Do not use the part number shown on this drawing for ordering purposes. Refer to the parts list. The part may be slightly different or amended since this drawing was prepared.

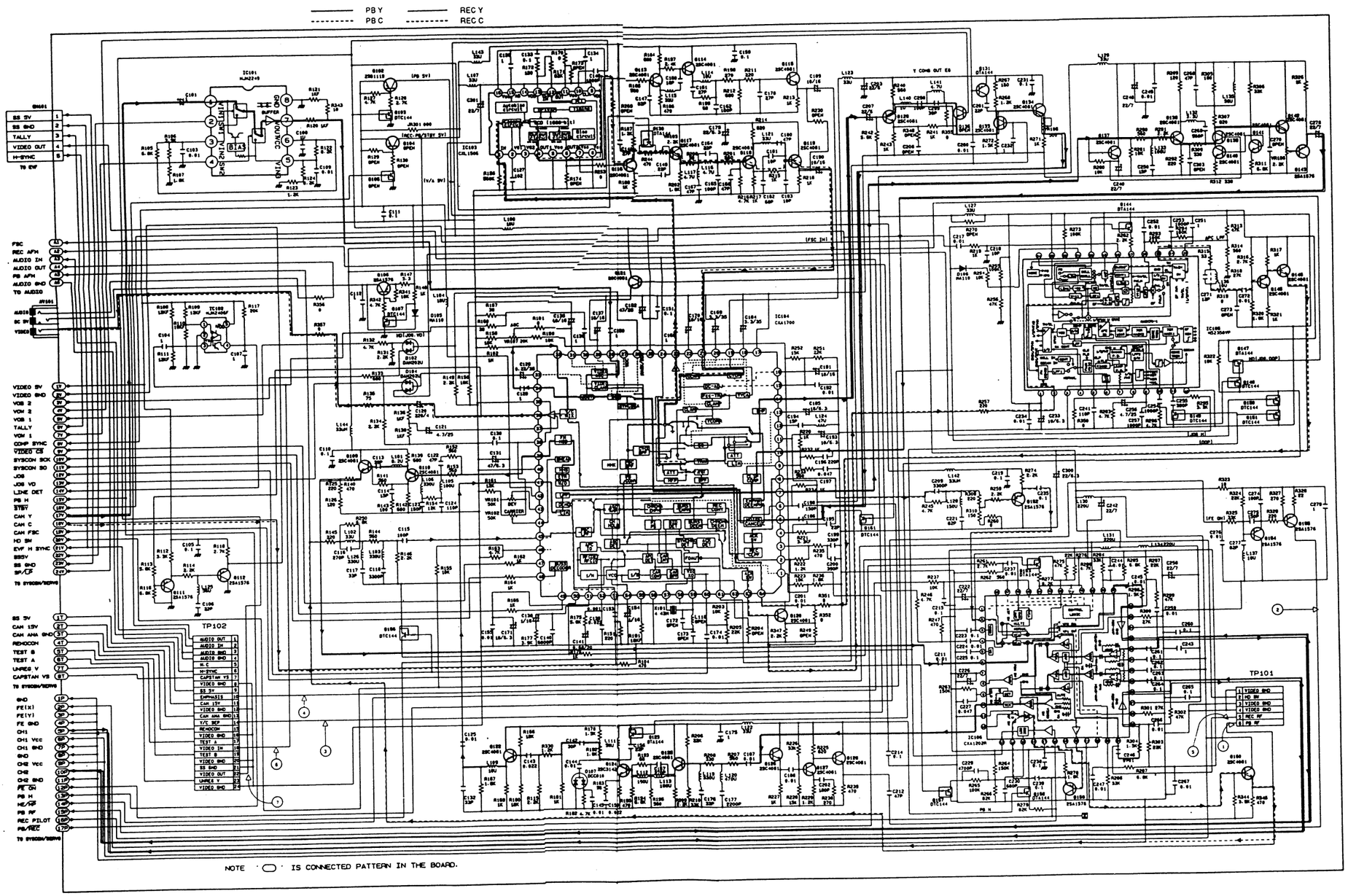
SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and require special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

VIDEO

VIDEO

VIDEO

13-4. VIDEO



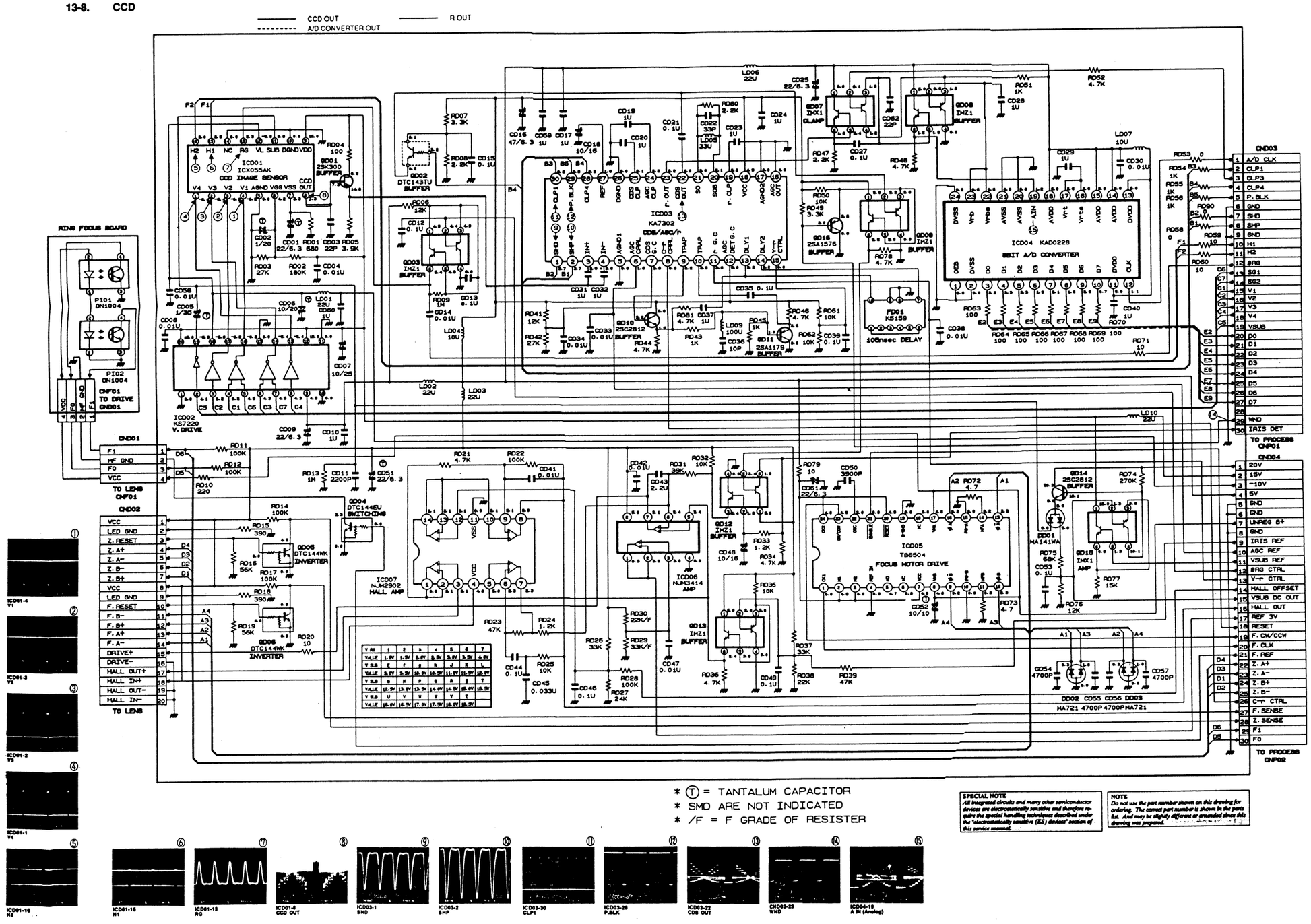
SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therfore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

13-18

VIDEO

13-8. CCD



* Ⓣ = TANTALUM CAPACITOR
* SMD ARE NOT INDICATED
* /F = F GRADE OF RESISTER

SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

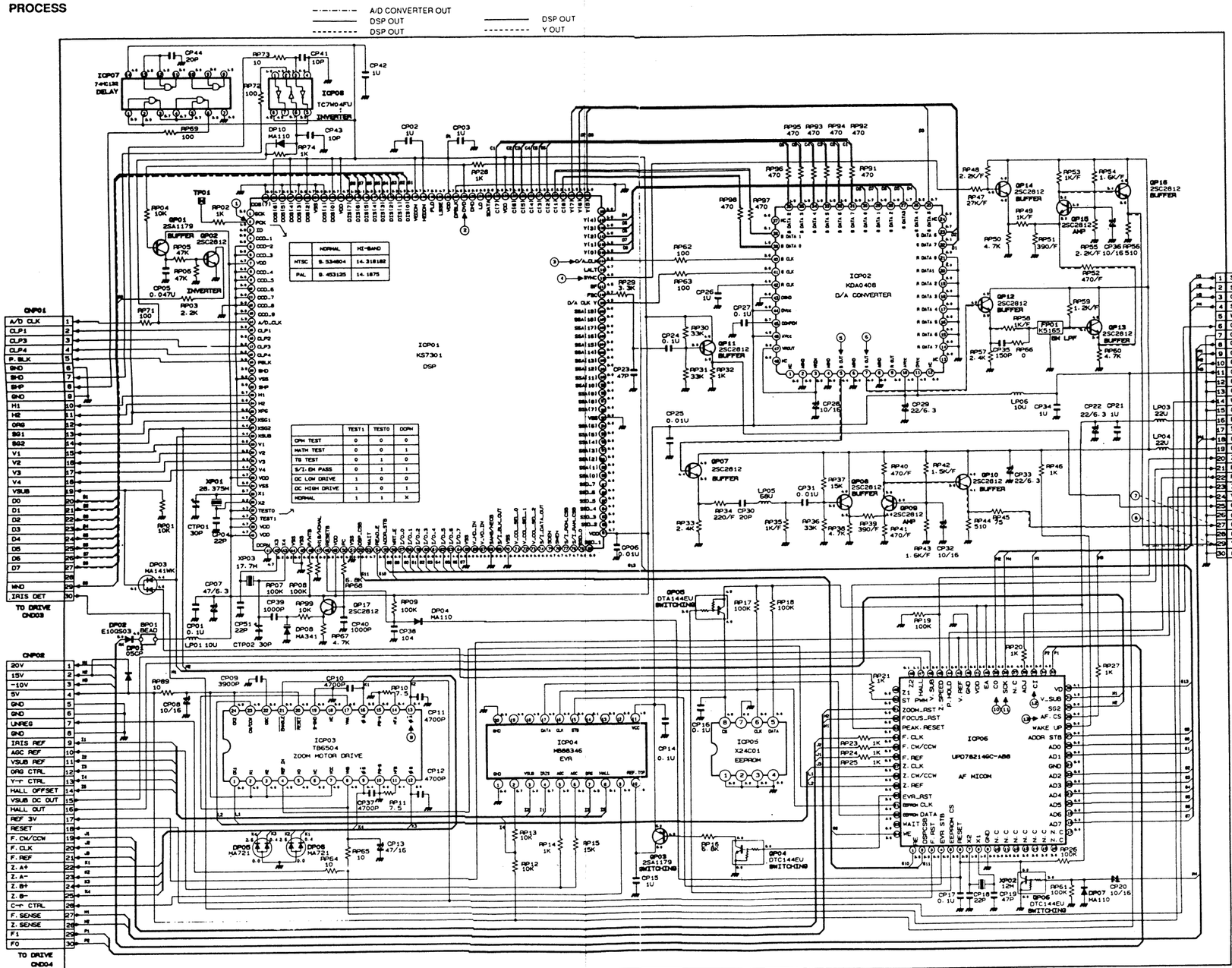
NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

PROCESS

PROCESS

PROCESS

13-9. PROCESS



13-20

PROCESS